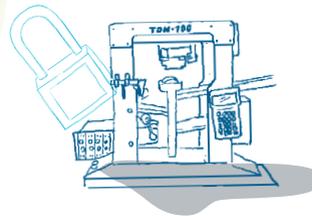
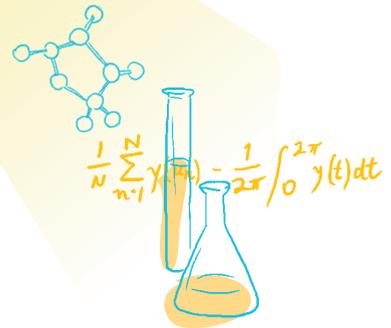
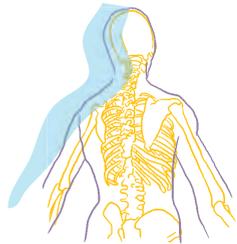


# AN INFLUENTIAL VOICE FOR 30 YEARS



## DECLARATION OF DATA RELIABILITY

The information contained in this activity report falls under my responsibility as president and CEO of the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST). I hereby attest to its accuracy and the reliability of the controls carried out.

Recommended by the IRSST's Scientific Advisory Board and approved by its Board of Directors, this 2010 activity report faithfully describes the Institute's mission, vision and principal achievements.

It presents the indicators used to assess the Institute's production and provides accurate and reliable data on the results obtained.

I therefore declare that I have every reason to believe that the observable facts and measurable data presented in this report correspond to the situation as it stood at December 31, 2010.



**Marie Larue**  
President and CEO



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# MESSAGE FROM THE PRESIDENT AND CEO

Looking back, 2010 was clearly a landmark year in more ways than one. Not only did it signal the IRSST's 30th anniversary, but it put into perspective the contributions our institution has made over the years to the advancement of occupational health and safety knowledge. It also laid the groundwork for our future endeavours and those of our partners, on highly topical issues.

In 2010, the IRSST positioned itself on a number of unavoidable issues – such as occupational psychological health – that are a growing preoccupation for the research and workplace communities. Based on our partners' concerns and solid evidence, this positioning was defined and discussed at length before consensus was reached. Members of the scientific community and the representatives of the employer associations and trade unions who sit on our Scientific Advisory Board agreed to the positioning proposed. I wish to take this opportunity to offer them my warmest thanks for their support throughout the year, with special thoughts for the late **Jean-Marc Brodeur**, who was recognized as an emeritus researcher in the field of population health. He whose input so enriched the meetings of our Scientific Advisory Board over the past ten years would most certainly have wanted to participate in the discussion.

With regard to both the aging of the workforce and the prevention of work-related psychological injuries, the issues facing the workplace community are as complex as the challenges confronting the research community. The dividing line between personal problems and work-related injuries is not always clear, nor are the determinants of such injuries always attributable solely to work. However, as we all know that these problems are already upon us, it is preferable for us to assume leadership by tackling them today. In this area as in others, our personnel are driven by the same quest for excellence and integrity as were the IRSST's founders back in 1980.

As stated in its mission, the Institute also serves as a scientific benchmark centre and source of expertise. Whether by sending experts to appear before the House of Commons Standing Committee on Health, which is looking into the dangers associated with nanotechnologies; by participating in national and international standardization committees; by holding colloquia and scientific events; or by offering officially recognized high-calibre laboratory services, the IRSST carries influence both at home and abroad.

The year 2010 marked our 30th anniversary, which we underscored through the inauguration of the IRSST Prize for the best OHS scientific article published as a result of research projects we have funded. We also joined forces with the Association de la recherche industrielle du Québec (ADRIQ) to award the first IRSST Prix Innovation – SST.

Looking back on our achievements in 2010 and those of the past 30 years, we can see all that we have accomplished, but also all that remains to be done. Given the severity and complexity of the emerging issues, the IRSST earnestly hopes that its knowledge and expertise will exert as much influence in the future as they have in the last three decades. We will thus be able to continue supporting the prevention of occupational injuries in the workplace and the rehabilitation of affected workers.



Marie Larue



# 2010 IN NUMBERS

## RESEARCH

**174** PROJECTS AND ACTIVITIES WERE ACTIVE<sup>1</sup>

**31** projects began, including (**21** joint, **7** external, and **3** internal)

**47** projects were completed

**96** projects were in progress

**185** PARTNER ORGANIZATIONS IN THE NETWORK WERE INVOLVED IN ACTIVE PROJECTS

**100** NEW REQUESTS FOR EXPERTISE WERE RECEIVED

**65** EXTERNAL COMMITTEES INCLUDED AT LEAST ONE IRSST REPRESENTATIVE:

**18** committees of the CSST and its network, including regulatory committees

**17** national and international standards committees

**30** other local, national and international committees

**36** SCHOLARSHIPS WERE AWARDED, FOR A TOTAL OF \$409,500<sup>1</sup>

1. Summaries of all the projects funded or carried out by the IRSST and a complete list of all scholarship recipients are available on its Web site at: [www.irsst.qc.ca](http://www.irsst.qc.ca).

## LABORATORY SERVICES AND EXPERTISE

**62,202**

ENVIRONMENTAL, TOXICOLOGICAL AND MICROBIOLOGICAL ANALYSES WERE PERFORMED, OF WHICH 85% WERE FOR PARTNERS IN THE PREVENTION-INSPECTION NETWORK: THE CSST, LOCAL HEALTH AND SOCIAL SERVICES NETWORK DEVELOPMENT AGENCIES, AND JOINT SECTOR-BASED ASSOCIATIONS

## DISSEMINATION

**51**

PUBLICATIONS, INCLUDING:

**49**

research reports, technical fact sheets, and guides published by the IRSST

**2**

guides published in collaboration with partners

**198**

PEER-REVIEWED SCIENTIFIC PUBLICATIONS RELATED TO PROJECTS CARRIED OUT OR FUNDED BY THE IRSST:

**68**

journal articles

**117**

articles published in conference proceedings

**13**

other publications, such as book chapters, master's theses, and doctoral dissertations

**51**

OTHER PRESENTATIONS GIVEN BY IRSST PERSONNEL OR IRSST-FUNDED RESEARCHERS AT SCIENTIFIC CONFERENCES OR EVENTS ORGANIZED BY PARTNERS

**39**

POPULARIZED ARTICLES IN *PRÉVENTION AU TRAVAIL*, THE MAGAZINE PUBLISHED BY THE CSST AND THE IRSST

**4,134**

PUBLICATIONS DISTRIBUTED IN RESPONSE TO REQUESTS

**458,179**

DOWNLOADS OF RESEARCH REPORTS FROM THE IRSST'S WEB SITES<sup>2</sup>

**1,209,416**

VISITS TO THE INSTITUTE'S WEB SITES<sup>2</sup>

**17,174**

SUBSCRIBERS TO *INFO IRSST*, THE ELECTRONIC NEWSLETTER PREPARED BY THE COMMUNICATIONS DIVISION, RECEIVED PERIODIC NEWS REGARDING THE IRSST'S LABORATORY ACTIVITIES, NEW RESEARCH PROJECTS, AND LATEST PUBLICATIONS

2. Data compiled by NetTracker software

5

**7,354**

HOURS WERE DEVOTED TO THE CALIBRATION, MAINTENANCE, AND REPAIR OF DIRECT-READING AND SAMPLING INSTRUMENTS, WITH 84% OF THESE HOURS DEDICATED TO THE OHS AND PREVENTION-INSPECTION NETWORK

# OCCUPATIONAL PSYCHOLOGICAL HEALTH

A source of concern for workers and employers alike, occupational psychological health (OPH), also known as mental health in the workplace, poses a major challenge. Every year, it results not only in considerable human costs, but also in major productivity losses for Québec's economy. Given the steady increase in employment-related psychological health problems, the IRSST launched a working group chaired by the director of its Scientific Division, **Paul-Émile Boileau**. This group drew up a research positioning proposal that was well-received by the IRSST's Scientific Advisory Board.

Occupational psychological health now figures officially on the IRSST's list of priority research themes.

More specifically, the Institute will be lending its support to original and useful research projects pertaining to the prevention of OPH problems and to the psychosocial factors that make it difficult to keep people with such problems at work or that hinder their sustainable return to work. In view of the complex and multifactorial nature of the problems and solutions involved, three key components will continue to guide our project development – interdisciplinary research teams, projects that address the needs of the workplace community, and a clear concern for knowledge translation – but from the broader perspective of ensuring sustainable development at a societal level.

## ---THEMES---

Based on this positioning, priority will be given to the following research themes:

- the relationship between the various characteristics of the labour market (e.g. size of companies and workforce mobility), work organization (e.g. workload and schedule) and psychological health;
- the role of psychosocial factors in the prevention of occupational psychological health problems;
- the role of physical and psychosocial factors and the state of psychological health in the prevention of musculoskeletal disorders (MSDs);
- the role of psychosocial factors in keeping people with an occupational psychological health problem at work and in their sustainable return to work;
- violence and harassment in the workplace.

These themes fit naturally into three research fields already in place at the IRSST: Work Context and OHS, Occupational Rehabilitation, and Musculoskeletal Disorders. The Institute will therefore channel its OPH research into these three priority fields, and will create and fill a position for a researcher specialized in this field.

### ---LEADERSHIP---

In a context where occupational psychological health injuries are on the rise, the IRSST wishes to fulfil its role by ensuring that the advancement of knowledge will help provide stakeholders with better, evidence-based tools. It intends to lead the way by developing and conducting studies that will yield solutions effective in preventing occupational psychological health injuries in Québec workers.

## COLLOQUIUM ON OCCUPATIONAL PSYCHOLOGICAL HEALTH

The IRSST's positioning on occupational psychological health was officially announced before **330** attendees at its annual institutional colloquium, which in 2010 was entitled *Santé psychologique: des solutions pour mieux intervenir dans les milieux de travail* (psychological health: solutions for more effective interventions in the workplace). The event targeted all those wanting to improve their knowledge of employment-related psychosocial risks, the impacts of these risks on health and the relevant solutions. Participants included researchers, physicians, preventionists, insurers, and worker and employer representatives, among others.

The lectures given by experts at this colloquium were based on the results of research projects funded by the IRSST. Since 2005, over **25** projects with an occupational psychological health component have been carried out. These projects involved, among others, convenience store employees who had been the victims of armed robbery, 911 emergency call centre employees suffering from stress and musculoskeletal injuries, and police officers who had experienced a traumatic event.

In addition to the evidence and findings presented by researchers, testimonials were given by individuals from various workplaces who came to share their expertise and experiences with implementing solutions, from the perspective of prevention and sustainable return to work. The attendees' great appreciation of this conference initiative corroborates the usefulness and applicability of research results.





# RESEARCH BY FIELD

**Thirty-one** new research projects and activities were added to those already under way, bringing the total roster of active projects in 2010 to no less than **174**. The new projects include the following:

## NOISE AND VIBRATION

- Development of a system that can be used in the field to measure the coupling forces at the interface between the hand and the handle of portable vibrating tools, **Pierre Marcotte** (IRSST) et al.
- Characterization of hypothenar hammer syndrome in workers using hand-held tools, **Alice Turcot** (Institut national de santé publique du Québec) et al.
- Quantification of biomechanical and sensorimotor parameters that affect the biodynamic response of the hand-arm system when using vibrating tools, **Denis Marchand** (Université du Québec à Montréal) et al.



## WORK CONTEXT AND OHS

- Conditions for work performance and OHS: results of an interregional investigation on youth in high school and college, **Luc Laberge** (Université du Québec à Chicoutimi) et al.



## PROTECTIVE EQUIPMENT

- Preliminary study to identify the accidents caused by slip and fall in police and school crossing guards services, **David Pearsall** (McGill University) et al.
- Updating of the *Guide pratique de protection respiratoire* (practical guide to respiratory protection), **Jaime Lara** (IRSST) et al.



## OCCUPATIONAL REHABILITATION

- Effect of an early screening and systematic referral program on long-term disability and the well-being of workers following common low back pain, **Manon Truchon** (Institut de réadaptation en déficience physique du Québec) et al.
- Review of knowledge on the assessment and management of workers with osteoarthritic knees, **Nathaly Gaudreault** (Centre d'action en prévention et réadaptation de l'incapacité au travail) et al.





### SAFETY OF INDUSTRIAL TOOLS, MACHINES, AND PROCESSES

- Exploratory study on lockout in the municipal affairs sector, **Yuvim Chinniah** (École Polytechnique de Montréal) et al.
- Safety of plastic injection molding machines with peripheral equipment during maintenance and production interventions in companies, **Yuvim Chinniah** (École Polytechnique de Montréal) et al.
- Evaluation of rolling motion-damping systems on Québec's semi-offshore fishing boats, **Marie-Hélène Fournier** (Halieutec), et al.



### CHEMICAL SUBSTANCES AND BIOLOGICAL AGENTS

- Mapping nanotechnology in Québec, **Charles-Anica Endo** (AGY consultation) et al.
- Review and analysis of the literature on variations in physiological parameters in older workers and their consequences for exposure limits, seen from a prevention perspective, **Claude Émond** (Université de Montréal) et al.
- Updating of the MIXIE computer-based tool, toxicological interactions, **Adolf Vyskocil** (Université de Montréal) et al.
- Occupational exposure to respiratory viruses in a hospital environment: a pilot project, **Caroline Duchaine** (Centre de recherche de l'Institut universitaire de cardiologie et de pneumologie de Québec) et al.
- General profile of Québec workers' exposure to carcinogens, **France Labrèche** (IRSST) et al.
- Knowledge review – Thermal and chemical stress, **Ginette Truchon** (IRSST) et al.
- Optimizing the mineralogical analysis method used for lung tissues, through transmission electronic microscopy – Phase 1 (experimentation), **Chantal Dion** (IRSST) et al.
- Web site on solvent substitutions in the workplace, **Michel Gérin** (Université de Montréal) et al.

### MUSCULOSKELETAL DISORDERS



- Teaching tools for upper limb MSD prevention in the automobile services sector, **Charles Gagné** (IRSST) et al.
- Measurement of paramedic ambulance technicians' exposure to musculoskeletal disorder risk factors, **Philippe Corbeil** (Université Laval) et al.
- Integration of a sustainable MSD prevention culture in a large manufacturing company: Step II Implementation of preventive actions, **Marie St-Vincent** (IRSST) et al.
- Comparison of two portable, three-dimensional back-posture measurement apparatuses, **Christian Larue** (IRSST) et al.
- Development of a prototype of a subway operator's seat: a partnership endeavour for concrete spinoffs, **Louise Sutton** (IRSST).
- Biomechanical and ergonomic impacts of handling on obese workers, **Philippe Corbeil** (Université Laval) et al.

### SPECIAL PROJECTS



- Relevance of and conditions for using thermal indicators in the Québec context, **Pierre C. Dessureault** (Université du Québec à Trois-Rivières) et al.
- Impacts of climate change on occupational health and safety, **Joseph Zayed** (Université de Montréal) et al.
- Estimation of the number of occupational cancers in Québec, **France Labrèche** (IRSST) et al.



# BUILDING PARTNERSHIPS

For several years now, the IRSST has been building partnerships to increase its research capacity and broaden its reach and influence. In 2010, these partnerships represented a total joint investment of **\$3,870,787**, with **\$1,905,680** of this amount coming from its partners.

Partnerships generate more than financial spinoffs. They also have enabling effects, allowing human and physical resources as well as expertise to be shared with various collaborators. In 2010, over half a dozen new partnership agreements were signed.

- An agreement was initialled with the **Centre hospitalier universitaire Sainte-Justine** for the joint funding of projects of the Ne<sup>3</sup>LS network concerning the ethical, environmental, economic, legal and social issues associated with nanotechnology. The IRSST undertook to set aside a resource envelope to fund research projects that include an occupational health and safety component.
- A specific agreement was ratified with France's **Institut national de recherche et de sécurité pour la prévention des accidents du travail et des maladies professionnelles** (INRS-France) for the optimization of a tool for selecting protective gloves resistant to single solvents or mixtures of solvents.
- The **École Polytechnique de Montréal** and the IRSST agreed to formalize their collaborative endeavours in a specific partnership agreement. These endeavours concern mainly the updating and carrying out of the research program for the Safety of Industrial Tools, Machines and Processes field.
- A research and development agreement was initialled with France's **Agence nationale de sécurité sanitaire, de l'alimentation, de l'environnement et du travail** (ANSES), which wants to draw on the IRSST's expertise in the area of exposure to asbestos and tremolitic talc. Under this agreement, ANSES will fund the production of a knowledge synthesis of the asbestiform or non-asbestiform nature of tremolitic talc, its effects on health (epidemiology), and its metrology and regulation.

- A first specific agreement was signed with the **Workplace Health, Safety & Compensation Commission of Newfoundland and Labrador (WHSCC)** with the aim of producing a review of the scientific literature on the risks of occupational cancers among shipyard workers. This service contract falls within the context of a research and expertise partnership formed by the two organizations in 2009.
- The **Fonds de la recherche en santé du Québec (FRSQ)**, **Fonds de recherche sur la nature et les technologies (FRNT)**, **Fonds de recherche sur la société et la culture (FRSC)** and the IRSST renewed their commitment to fund the Réseau de la recherche en santé et en sécurité du travail du Québec (RRSSTQ).
- A joint research funding program was created with the **Direction de la santé publique** of the **Agence de la santé et des services sociaux de Montréal**. The studies conducted will assess the effectiveness of the prevention activities resulting from the mandate given by the CSST to occupational health and safety teams in the public CSSS (centres de santé et de services sociaux) network.



## THE MINING SECTOR: A PRIME EXAMPLE

Among the key concerns for mining companies, which are facing an aging workforce combined with the recurrent problem of labour shortages, are the issues of recruiting and integrating new workers. These issues led the Association paritaire pour la santé et la sécurité du travail du secteur minier (joint sector-based association for occupational health and safety in the mining sector) to submit a request asking the Institute to study the matter. This was the starting point for the development of a project entitled *Conditions for a safe and competent integration of new workers into the mining sector*, and offers a prime example of the multiplier effects of partnerships. In response, the IRSST obtained a financial contribution of **\$332,000** from Québec's Commission des partenaires du marché du travail (CPMT) and of **\$25,000** from the Comité sectoriel de main-d'œuvre de l'industrie des mines du Québec. This joint funding will enhance the project by increasing the number of mining companies selected to take part in the study from three to five.

Statistical analyses, document analysis, interviews, work activity observation and auto-confrontation are some of the data collection methods that will be used to:

- continue developing a model of the effect of work and production organization on knowledge transmission in a context where there is an urgent need to integrate a diverse population of new workers into the mining sector;
- bring to light the wealth of job knowledge acquired by experienced workers to protect themselves against risks while still meeting production demands;
- identify the characteristics of the work context and of the way work is organized that contribute to the development of this knowledge;
- develop possible solutions with community resources involved in the project.

Starting in the design phase of the project, mechanisms were put in place to facilitate the transfer of results and the appropriation of research knowledge by the workplaces involved. Having been asked to sit on a follow-up committee, several partners will be informed of the results and thus able to pass them on to companies in their sector.

# REALITY-BASED PROJECTS

The IRSST forms follow-up committees to ensure that the aims of research projects correspond to the realities and needs of the field. Made up of employer and trade union representatives, preventionists, professionals and potential intermediaries, these committees provide researchers with their expertise to help them define, develop, and carry out their studies and then transfer and apply their results in the field. By consulting the committee members and giving them the opportunity to influence how the scientific activity is carried out, the Institute increases the likelihood that the research results will be properly adapted to the workplaces concerned and appropriated by the parties involved.

In 2010, **99** follow-up committees were active. Their members represented **185** organizations from different communities.



**BREAKDOWN OF MEMBERS OF THE FOLLOW-UP COMMITTEES**

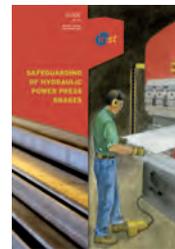
- 10% Universities/scientific research organizations
- 9% OHS professionals
- 8% Employer associations
- 12% Trade unions
- 3% Community associations/groups
- 22% Private companies
- 31% Public agencies
- 4% Professional orders and associations
- 1% Other

# KNOWLEDGE TRANSLATION

For knowledge to have impact, it must be translatable into concrete, useful applications. One way of facilitating knowledge translation and promoting the appropriation of research results is to process and simplify scientific content to make it more readily accessible. To this end, every year the IRSST publishes guides, technical fact sheets, and pamphlets, organizes conferences, and brings satellite Web sites on line to equip preventionists and influence prevention practices in workplaces. In 2010, the most popular materials included the following:

## ---SAFEGUARDING OF HYDRAULIC POWER PRESS BRAKES---

Designed to inform companies of the means available for safeguarding hydraulic power press brakes, this guide emphasizes the two most recent solutions: the safety light curtain and the laser beam device. It is aimed at all those who are involved in decision making and concerned about safeguarding these types of brakes, such as engineers, company owners, and CSST inspectors.



## ---BERYLLIUM – CLEAN-UP GUIDE---

This guide is intended to help those responsible for clean-up activities in establishments containing beryllium to develop a housekeeping or decontamination protocol in order to obtain acceptable levels of this metal. It is also a reference tool for companies specialized in the housekeeping or decontamination of workplaces.



## ---HAND-HELD PNEUMATIC TOOLS---

IRSST researchers measured the noise and vibration levels of five categories of tools used in automobile repair shops: grinders, sanders, ratchets, impact tools and air hammers. This fact sheet identifies the noise and vibration exposure levels that must not be exceeded for various periods of time. It also includes recommendations for working safely with these tools and references containing further information.



## ---PROTECTIVE GLOVES SELECTION GUIDE---

Presented in the form of a Web site, this guide provides the necessary information to help individuals identify the types of protective gloves best adapted to their needs. It includes an interactive selection tool that allows users to look for specific glove models or to conduct criteria-based information searches, particularly criteria such as glove resistance to mechanical stressors, food handling compliance requirements and cost.



# KNOWLEDGE THAT CARRIES INFLUENCE

The House of Commons Standing Committee on Health in Ottawa invited the IRSST to testify at a session on the potential risks and advantages of nanotechnologies. The author of numerous publications on the subject, including the *Best Practices Guide to Synthetic Nanoparticle Risk Management*, **Claude Ostiguy**, who is also the director of our Research and Expertise Support Department, set the tone for the committee's work as the first guest expert to take the floor.

Mr. Ostiguy expressed the IRSST's viewpoint to the parliamentarians and guests present, recommending that a "precautionary approach" be taken: "The IRSST considers that all organizations handling nanoparticles must promote the introduction of strict prevention procedures, which remain the only way to prevent the risk of contracting occupational diseases." He argued in favour of the development and implementation of prevention programs.

Mr. Ostiguy's presentation to the committee members included **four** recommendations:

- Promote and support the responsible and safe development of nanotechnologies in Canada by adopting a preventive approach in order to minimize occupational exposure to nanoparticles;
- Facilitate the funding of certain infrastructures that are normally ineligible, so that researchers, mainly in the university community, can work both to change laboratory ventilation systems, including exhaust hoods, and to implement effective prevention approaches;
- Require adequate labelling of all products or mixtures of products containing nanoparticles, such that, at the very least, the composition, percentage content and size of the particles are specified. The same procedure should be followed regarding the information provided in Material Safety Data Sheets (MSDSs) for products. This is essential to making companies aware that they are handling nanoparticles, if such is the case;
- Promote the production and distribution of good practices guides to support researchers and companies. To this end, the IRSST has already developed several documents in both Canada's official languages, and the Canadian Standards Association (CSA) is currently drafting a standard (in the form of a technical guide) that is also designed to support management of the specific risks associated with nanoparticles in the workplace.

The invitation received from the House of Commons Standing Committee on Health constituted a formal recognition of the IRSST's leadership in the field of nanotechnology-related risk management. It provided an exceptional opportunity to influence Canadian policy, since the primary aim of the meeting was to collect information for the purpose of preparing the legislative orientations regarding nanotechnologies to be adopted in Canada.

# LABORATORY SERVICES AND EXPERTISE

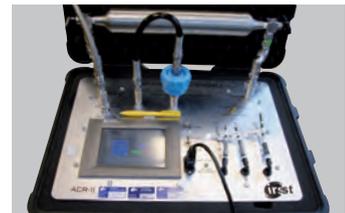
In addition to responding every year to tens of thousands of requests for environmental, toxicological, and microbiological analyses, the IRSST's laboratories contribute to the advancement of knowledge in the area of industrial hygiene. Their influence is felt not only through the analytical support and expertise they offer, but also through their invention of analytical methods and tools that enable hygienists and others to do their jobs more efficiently.

## ---A MORE COMPACT AND ACCURATE APPARATUS---

After conclusive trials in the field, a new portable, self-contained apparatus for sampling and testing compressed breathing air was added to the bank of equipment that the IRSST offers to its clients.

Developed by Innovation Maritime with the collaboration of the IRSST's laboratories, this compact, modern, high-performance apparatus has built-in air sampling and testing capacities. Users no longer have to utilize several instruments or to repeatedly adjust settings. In addition to reducing inspection time, the system increases the precision of the measurements and accuracy of the results. This in turn makes prompt intervention possible, unlike in the past, where samples first had to be sent to the laboratory for analysis.

Compressed breathing air is used chiefly in factories, mines, paint shops, and underwater work sites. Firefighters, police officers, and healthcare workers use it on a regular basis in the course of their work.



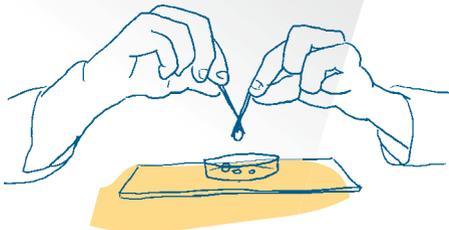
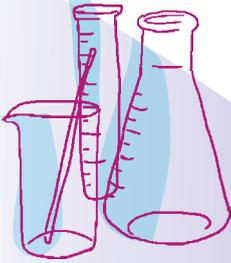
## ---NEW METHODS---

The IRSST's laboratories improved their service offer by introducing new analytical methods, specifically:

- the multi-solvent GC-MS quantification method;
- the multi-metal ICP-MS quantification method.

These two new techniques allow faster processing of samples and have exceptional sensitivity to a number of substances and elements.

Moreover, after years of work, the laboratory personnel's participation in the TC146/SC2/WG4 working group of the International Organization for Standardization (ISO) on organic vapour sampling and testing methods bore fruit. Developed by the IRSST in the 1990s, the method of quantifying air-borne isocyanates using a double-filter sampling apparatus and high-performance liquid chromatography was selected by the ISO for inclusion in its standards catalogue, which is recognized the world over.



### ---WHMIS---

The IRSST's laboratories endorsed a collaboration agreement with the National WHMIS Office in Ottawa, for the purpose of developing a sampling and testing program for monitoring compliance with and enforcing WHMIS requirements under the *Hazardous Products Act* (HPA) and the *Controlled Products Regulations* (CPR).

This program requires the development and field testing of a standard operating procedure and the introduction of an inter-laboratory test program. The agreement, which also entails the development of methods for silica, isocyanate, and organic solvent analysis, ensures the IRSST's Canada-wide leadership in the field of industrial hygiene.

### ---MICROBIOLOGY LABORATORY---

Beginning in 1986 when questions were first raised about air quality in office buildings, the IRSST started taking an interest in microbiology. Since that time, its microbiology laboratories have witnessed steady growth in the number of tests they are asked to perform, leading to the need to expand and modernize their facilities. This redevelopment of their premises included the addition of a dark room for epifluorescence microscopy, with a specific section reserved for the preparation of culture media.

A second laboratory dedicated to DNA and endotoxin handling, which requires a controlled laboratory environment, was added to the renovated Class II laboratory. To avoid the risk of accidents and contamination, the three rooms that now make up the Institute's microbiology laboratories are equipped with automatic doors, and can only be accessed via a negative-pressure controlled-access air lock (anteroom).

### ---LIMS---

Vital to the smooth operations of the Laboratory Services and Expertise department, the project to replace the laboratory test management system took a crucial step forward in 2010, when the Board of Directors authorized the IRSST to purchase, adapt and implement a new tool. A call for tenders process followed, and one of the bidders was selected to carry out this project, which ranks among the top priorities for strategic IP planning.

Commonly known as the Laboratory Information Management System (LIMS), this database facilitates the management of the tens of thousands of calibration and testing requests handled by the IRSST annually. The system compiles all the test results and generates reports that are then sent to clients. The purchase of this system enables the Institute's laboratories to meet the requirements of certification agencies. The LIMS is expected to become operational in 2012.

# DISSEMINATING KNOWLEDGE



Scientific events, lectures, scholarly journals, social networks, the Internet, online newsletters, viral marketing (electronic form of word-of-mouth), and videos are some of the many techniques used by the IRSST to ensure knowledge dissemination.

## ---SPECIAL ISSUE ON VIBRATIONS---

Organized by the IRSST and Concordia University in 2009, the 4th International Conference on Whole Body Vibration Injuries was still a topic of conversation in 2010. Japan's National Institute of Occupational Safety and Health (JNIOSH) devoted a special issue of its scientific journal *Industrial Health* to the conference.

The researchers invited to this conference, which was held for the first time in North America, were encouraged to submit articles based on the content of presentations made before a peer review committee. Of these, the publishers of the special issue selected **20**, which provided a good state-of-the-art review of knowledge on themes such as epidemiology and the impacts of vibrations, biodynamics, modelling, assessment of exposure, and seats. **Three** of the articles published were written by IRSST scientists.

This special issue of *Industrial Health* provided an outstanding conclusion to this event, which was a success both scientifically and as a showcase for the IRSST's expertise.

## ---OPEN ACCESS---

Open access to scientific literature means providing universal, free, and fast access to the knowledge published in scholarly journals. Subscribing to a movement that now spans all the continents, the IRSST institutionalized this practice by adopting an open access policy.

Given that open access fosters wider dissemination of the results of OHS research in the research community and the working community alike, the Institute thus asks its scientists and encourages the beneficiaries of its grant and scholarship programs to ensure that the articles emerging from endeavours that it funds be made freely available no later than one year after their publication in a scholarly journal. As soon as a scientific article becomes openly accessible, the IRSST archives the manuscript on its Web site.

## COLLABORATOR OF THE INTERNATIONAL LABOUR ORGANIZATION

The International Labour Organization (ILO) welcomed the IRSST into its network of CIS Centres as a Collaborating Centre for Canada. The International Occupational Safety and Health Information Centre (CIS) of the ILO collects all relevant information published worldwide on occupational health and safety. The IRSST thus multiplied its capacity for disseminating the scientific knowledge it produces at least tenfold by making it more widely accessible to anyone wishing to support preventive actions with evidence.

In a letter confirming this affiliation, the ILO stated that "the IRSST's presence and influence have been recognized worldwide for 30 years in the preventionist community." By joining the ranks of the CIS Centres, the Institute is contributing to the development of a global network of institutions dedicated to the collection and dissemination of information in the occupational health and safety field.

# BROAD SCOPE AND INFLUENCE

In 2010, the publications most frequently downloaded from [www.irsst.qc.ca](http://www.irsst.qc.ca) were the following:

- Document d'information pour la sélection des gants de protection contre les risques mécaniques, **Patricia Dolez** (École de technologie supérieure) et al. (in French only)
- Engineered Nanoparticles – Current Knowledge about OHS Risks and Prevention Measures – Second Edition, **Claude Ostiguy** (IRSST) et al.
- Facteurs prévisionnels du développement de l'état de stress post-traumatique à la suite d'un événement traumatique chez les policiers – Volet rétrospectif, **André Marchand** (Université du Québec à Montréal) et al. (in French only)
- Beryllium – Clean-Up Guide – Workplace Housekeeping and Decontamination, **Stéphanie Viau** (consultant) et al.
- Prévention de la violence entre membres d'une même organisation de travail – Évaluation d'une intervention participative, **Julie Dussault** (Centre de santé et de services sociaux Québec-Sud) et al. (in French only)
- Dépistage précoce de l'incapacité chronique liée aux lombalgies – Élaboration et validation d'un questionnaire, **Manon Truchon** (Institut de réadaptation en déficience physique du Québec) et al. (in French only)
- La prise en compte des situations de travail dans les projets de conception – La pratique des concepteurs et des opérations impliqués dans un projet conjoint entre un donneur d'ouvrage et une firme de génie-conseil, **Fernande Lamonde** (Université Laval) et al. (in French only)
- Verifying the Content of Lockout Programs, **Damien Burlet-Vienney** (IRSST) et al.
- Les risques de troubles musculo-squelettiques aux membres supérieurs dans le secteur des services à l'automobile – Étude exploratoire, **Denis Marchand** (Université du Québec à Montréal) et al. (in French only)
- Gestion des changements technologiques et organisationnels et représentations sociales – Impact sur la SST, **Camille Legendre** (Université de Montréal) (in French only)



# AN INFLUENTIAL VOICE ON THE WEB

As a cornerstone of the Institute's marketing strategy, the IRSST's main Web site underwent a makeover. Its graphics features were enhanced and a viewer application was added to the home page to make it easier to find the latest research reports. These improvements paved the way for a major overhaul of the site. A business plan was adopted in this regard. It identified and planned the work needed to design and launch a third-generation Web site by the end of 2011.

The plan was implemented during the year, and a new Web Content Management (WCM) system was chosen, customized, and implemented. It has improved the editing environment and streamlined access management. Work was also done to enhance page referencing and measurement of the Web site's performance.

Efforts were made to diversify the content available, in addition to modernizing the look of the Web site. Focusing on multimedia, the IRSST now offers its clientele the opportunity to view videos, presentations, and lectures that feature content of interest to the research community and the working world.

The IRSST's Web sites and blogs welcome more than **one million** visitors a year.



## SUSTAINABLE DEVELOPMENT

The IRSST adopted a sustainable development action plan of its own accord. This commitment reflects its determination to incorporate sustainable development principles, which fit in perfectly with its mission, into its spheres of activity. The Institute therefore plans to do its part, mainly through research, to eliminate at source, or reduce, dangers to the health and safety of Québec workers and to rehabilitate workers who have sustained employment injuries or contracted occupational diseases.

Built around three of the strategic directions defined in the Québec government's sustainable development strategy, the IRSST's plan is designed to:

- inform, raise awareness, and innovate;
- reduce and manage risks in order to improve health, safety and the environment;
- produce and consume responsibly.

To show the importance it places on sustainable development, the Institute's next annual activity report will assess its attainment of the objectives set in this action plan.

# THE INFLUENTIAL VOICE OF OUR HUMAN RESOURCES

The IRSST would not be what it is today without its employees. Its staff of **148** includes **118** researchers, professionals, and technicians working in various disciplines. In 2010, the IRSST hired **15** new employees, including **six** to permanent positions.

During the year, the IRSST hosted **36** trainees, students, and collaborators. The latter included guest professor **Ludovic Tuduri**, who specializes in analytical chemistry and is linked to the Protective Equipment research field; a professor on sabbatical, **Denis Gagnon**, who specializes in musculoskeletal modelling and is linked to the Musculoskeletal Disorders field; and four doctoral students.

The IRSST relies on an external network of nearly **200** researchers in addition to its own resources to carry out its research program.

## ---PLANNING THE SUCCESSION---

Well aware that the present paves the way to the future, the IRSST stepped up its efforts to encourage the next generation to opt for a career in occupational health and safety research.

The Institute therefore revamped its Graduate Studies Scholarship and Postdoctoral Fellowship Program to increase the appeal of this option. It upped the amounts offered and created a guest postdoctoral fellowship aimed at applicants who have completed their doctorate outside Québec.

Overall, the improvements made to the program were designed to:

- encourage the hosting of young researchers from outside Québec and motivate young Québec researchers to seek broader training elsewhere;
- increase the numbers of new researchers whose projects correspond to the Institute's research fields or programs under development;
- encourage future researchers to acquire knowledge translation skills;
- promote the retention of postdoctoral fellows in the field of OHS research.

By way of encouraging the upcoming generation of scientists, the IRSST awarded **36** scholarships to students chosen from among the **72** applicants in its 2010–2011 scholarship competition. These included **nine** new scholarships and **27** scholarship renewals, for a total investment of **\$409,500**.

More specific needs required other types of initiatives. To meet the demands for machine safety research, the IRSST selected two promising employees and encouraged them to continue their studies toward a Master's degree and eventually a doctorate. It also retained the services of a professor from the École Polytechnique de Montréal in the capacity of research director to supervise and support these employees. In addition, one component of the machine safety

## CIHR

Supported financially by the IRSST, the Strategic Training Program of the Canadian Institutes of Health Research (CIHR) helps improve skills in the area of rehabilitation and return to work. Thanks to this program, IRSST researcher **Iuliana Nastasia** obtained another doctorate in work disability prevention from the Faculty of Medicine and Health Sciences at the Université de Sherbrooke.

cooperation agreement signed with the INRS-France provided for the exchange and hosting of trainees, another strategy that is designed to spark the new generation's interest in conducting research in a sector where resources are few and far between.

And, in preparation for the inevitable retirements and accompanying loss of expertise, the Institute allowed two of its young chemists to top up their knowledge in industrial hygiene by preparing them to obtain CIH certification from the American Industrial Hygiene Association (AIHA).

#### ---ROLLOUT OF SIGPI---

After more than a year's work, the IRSST now has a modern, flexible, modular database that ensures the efficient management of its research projects. The Système d'information et de gestion des projets de l'IRSST (SIGPI) was rolled out gradually before being extended to staff members, who now use it in carrying out their functions. No fewer than **80** people were trained on the system.



SIGPI replaced the older operational database, which was no longer adequate for the Institute's business processes and no longer reflected the new institutional structure. While the first version contained information only about activity year 2010, the data entered (sometimes manually) to date now allow us to go back to 2006.

The nerve centre of the entire organization, SIGPI is vital both to ensuring financial and administrative follow-up of research grants paid to external researchers and to tracking internal projects. Among other things, it allows the extraction of reliable management indicators, supports the development of the annual research plan, and feeds the IRSST's Web site with a wide range of data.

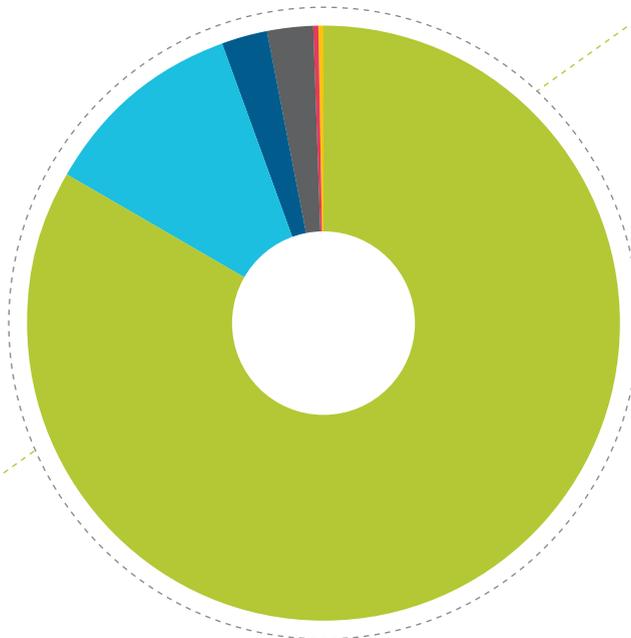
#### ---OCCUPATIONAL HEALTH AND SAFETY---

In 2010, the Occupational Health and Safety Committee held **seven** meetings aimed at integrating exemplary safety practices into the Institute's daily activities. The result was that **34** persons received training on the WHMIS, while **12** others received training on the transportation of hazardous materials.

During the course of the year, **12** new reports were entered in the accident, incident, and first-aid register. One accident was the subject of an investigation.

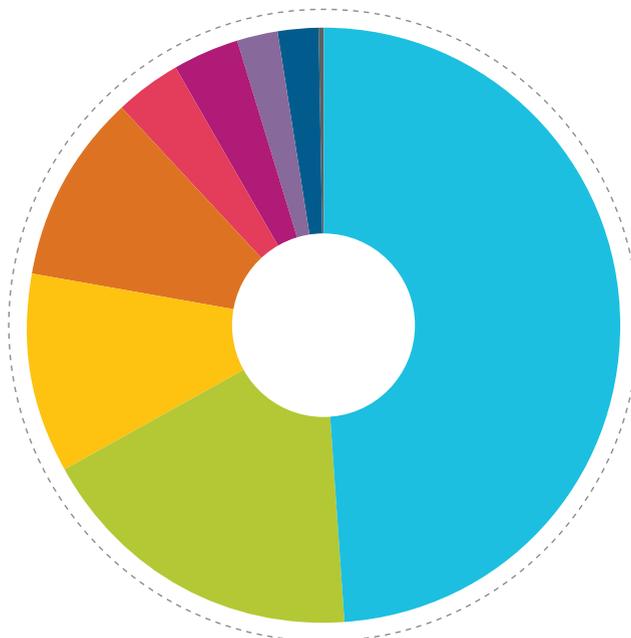
Once again, the IRSST's total employment injury tally earned it a lower CSST assessment rate than that of other enterprises classified in the same activity sector.

# FINANCIAL OVERVIEW



**REVENUES \$22,724,616**

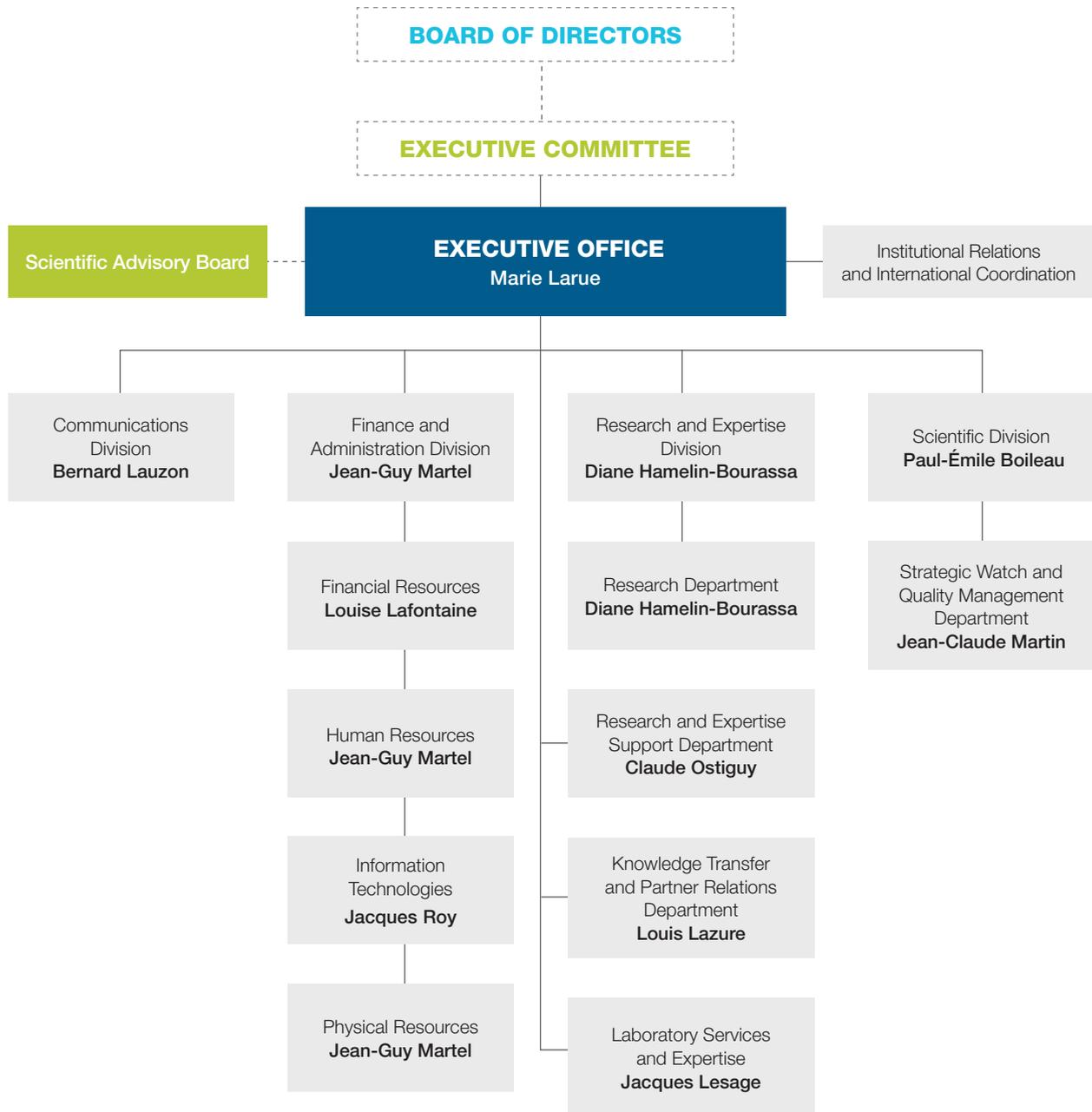
- 83.5% ■ CSST
- 11.2% ■ Laboratory services
- 2.4% ■ Special projects
- 2.5% ■ External contracts
- 0.2% ■ Beryllium project
- 0.2% ■ Other



**EXPENDITURES \$22,841,621**

- 49.1% ■ Internal research
- 17.9% ■ External research
- 11.0% ■ Laboratory services
- 10.2% ■ Finance and administration
- 3.7% ■ Communications
- 3.5% ■ Management
- 2.3% ■ External contracts
- 2.1% ■ Special projects
- 0.2% ■ Beryllium project

# ORGANIZATIONAL CHART



# COMMITTEES

AS AT DECEMBER 31, 2010

On behalf of the IRSST and its personnel, the president and CEO welcomes the new members of the board and committees and offers her sincerest thanks to outgoing members for jobs well done.

## BOARD OF DIRECTORS

The Board of Directors determines the Institute's orientation, development framework, and financing. It is composed of the chair, seven representatives of employer associations, and seven worker representatives.

In 2010, the members of the IRSST's Board of Directors met eight times, while those of the Executive Committee\* held eight sessions.

### CHAIR

Luc Meunier\*

### WORKER REPRESENTATIVES

Michel Arsenault\*  
Andrée Bouchard  
Claude Faucher  
Lucie Levasseur  
Yves Ouellet  
Daniel Roy  
Roger Valois

### EMPLOYER REPRESENTATIVES

Françoise Bertrand  
Yves-Thomas Dorval\*  
France Dupéré  
Martine Hébert  
Patricia Jean  
Carmel Laflamme  
Simon Prévost

### OBSERVER

Suzanne Thérien

### IRSST REPRESENTATIVE

Marie Larue

**DEPARTURES** Richard Goyette, Bernard Brassard, Dominique Malo.

**APPOINTMENTS** Lucie Levasseur, Yves Ouellet, Simon Prévost, Martine Hébert, Patricia Jean, Carmel Laflamme.

## SCIENTIFIC ADVISORY BOARD

The Scientific Advisory Board serves the president and CEO in a consulting capacity. Regarding research, it is asked to judge the relevance, priority, and scientific merit of internal and external research projects and programs. It comprises the Institute's president and CEO, six members of the scientific and technical communities, four worker representatives, and four employer representatives.

In 2010, the members met **eight** times.

### CHAIR

Marie Larue

### WORKER REPRESENTATIVES

Micheline Boucher  
Jean Dussault  
Daniel Flynn  
Denis Mailloux

### EMPLOYER REPRESENTATIVES

Richard Lapointe  
Roger M. Laporte  
Chantale Lavoie  
Alain Neveu

### MEMBERS OF THE SCIENTIFIC AND TECHNICAL COMMUNITIES

Christine Colin  
Camille Limoges  
Céline Saint-Pierre  
Pierre Galarneau  
Yves Rousseau  
André Van Neste

**OBSERVER** Guylaine Rioux

**DEPARTURES** Pascale Gauthier, Jean-Marc Brodeur.

**APPOINTMENTS** Chantale Lavoie, Céline Saint-Pierre.

# LIST OF 2010 PUBLICATIONS

## IRSSST PUBLICATIONS

BAHLOUL, A., ROBERGE, B., GOYER, N., CHAVEZ, M., REGGIO, M., *La prévention des intoxications dans les silos à fourrage*, Études et recherches / Rapport R-672, Montréal, IRSSST, 2010, 67 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Conditions et processus de changement lors d'interventions externes en SST – Elaboration d'outils pour les praticiens*, Études et recherches / Rapport R-647, Montréal, IRSSST, 2010, 139 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 1 – Présentation des outils*, Études et recherches / Annexe RA1-647, Montréal, IRSSST, 2010, 61 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 2 – Guide du journal de bord*, Études et recherches / Annexe RA2-647, Montréal, IRSSST, 2010, 18 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 3 – Guide pour l'analyse du contexte*, Études et recherches / Annexe RA3-647, Montréal, IRSSST, 2010, 63 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 4 – Guide de la feuille de route*, Études et recherches / Annexe RA4-647, Montréal, IRSSST, 2010, 101 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 5 – Guide de l'outil de bilan*, Études et recherches / Annexe RA5-647, Montréal, IRSSST, 2010, 27 pages.

BARIL-GINGRAS, G., BELLEMARE, M., POULIN, P., ROSS, J., *Recueil d'outils sur les aspects sociaux et organisationnels des interventions externes en SST, Partie 6 – Référentiel*, Études et recherches / Annexe RA6-647, Montréal, IRSSST, 2010, 235 pages.

BOIVIN, D.B., TREMBLAY, G.M., BOUDREAU, P., *Les horaires rotatifs chez les policiers – Étude des approches préventives complémentaires de réduction de la fatigue*, Études et recherches / Rapport R-659, Montréal, IRSSST, 2010, 118 pages.

BOUSQUET, L., MARCOTTE, P., *Les outils portatifs pneumatiques – Protégez vos oreilles et vos mains*, Études et recherches / Fiche technique RF-648, Montréal, IRSSST, 2010, 6 pages.

BURLET-VIENNEY, D., JOCELYN, S., CHINNIH, Y., DAIGLE, R., MASSÉ, S., *Verifying the Content of Lockout Programs*, Studies and Research Projects / Technical Data Sheet RF-635, Montréal, IRSSST, 2010, 48 pages.

BURLET-VIENNEY, D., JOCELYN, S., CHINNIH, Y., DAIGLE, R., MASSÉ, S., *Safeguarding of Hydraulic Power Press Brakes*, Studies and Research Projects / Technical Data Sheet RF-651, Montréal, IRSSST, 2010, 35 pages.

BURLET-VIENNEY, D., JOCELYN, S., CHINNIH, Y., DAIGLE, R., MASSÉ, S., *Sécurisation des presses plieuses hydrauliques*, Études et recherches / Guide technique RF-634, Montréal, IRSSST, 2010, 32 pages.

DESMARAIS, L., GIRAUD, L., BÉLANGER, J., TRÉPANIÉ, J., *Évaluation de l'implantation des conseils de sécurité par les usagers – Le cas du guide de l'utilisateur relatif à la sécurité des convoyeurs – Phase exploratoire*, Études et recherches / Rapport R-669, Montréal, IRSSST, 2010, 100 pages.

DIALLO, F.-B., BÉGIN, D., GÉRIN, M., *La substitution des solvants par les esters méthyliques d'acides gras d'huiles végétales*, Bilans de connaissances / Rapport B-079, Montréal, IRSSST, 2010, 102 pages.

DION, C., VIAU, S., DUFRESNE, A., CLOUTIER, Y., PERRAULT, G., *Exposition au béryllium des travailleurs de la transformation d'aluminium et du magnésium – Évaluation des paramètres de surveillance environnementale*, Études et recherches / Rapport R-673, Montréal, IRSSST, 2010, 58 pages.

DOLEZ, P., SOULATI, K., GAUVIN, C., LARA, J., VU-KHANH, T., *Document d'information pour la sélection des gants de protection contre les risques mécaniques*, Études et recherches / Guide technique RG-649, Montréal, IRSSST, 2010, 65 pages.

DROLET, D., GOYER, N., ROBERGE, B., LAVOUÉ, J., COULOMBE, M., DUFRESNE, A., *Stratégies de diagnostic de l'exposition des travailleurs aux substances chimiques*, Études et recherches / Rapport R-665, Montréal, IRSSST, 2010, 88 pages.

DURAND, M.-J., CORBIÈRE, M., BRIAND, C., COUTU, M.-F., ST-ARNAUD, L., CHARPENTIER, N., *Les facteurs reliés aux absences prolongées du travail en raison d'un trouble mental transitoire : développement d'un outil de mesure*, Études et recherches / Rapport R-674, Montréal, IRSSST, 2010, 59 pages.

DUSSAULT, J., JAUVIN, N., VÉZINA, M., BOURBONNAIS, R., *Prévention de la violence entre membres d'une même organisation de travail – Évaluation d'une intervention participative*, Études et recherches / Rapport R-661, Montréal, IRSSST, 2010, 98 pages.

FOURNIER, P.-S., MONTREUIL, S., BRUN, J.-P., BILODEAU, C., VILLA, J., *Étude exploratoire des facteurs de la charge de travail ayant un impact sur la santé et la sécurité : Étude de cas dans le secteur des services*, Études et recherches / Rapport R-668, Montréal, IRSSST, 2010, 73 pages.

GIRAUD, L., MÉNARD, M., *Comment se protéger des angles rentrants en imprimerie? Procédures sécuritaires recherchées*, Études et recherches / Guide technique RG-689, Montréal, IRSSST, ASP Secteur imprimerie et activités connexes, 2010, 76 pages.

GOYER, N., BAHLOUL, A., VEILLETTE, C., *Prévention de l'exposition des travailleurs à la silice – À l'intention des entreprises du secteur de la transformation du granit et autres matériaux contenant du quartz*, Montréal, CSST, IRSSST, 2010, 16 pages.

IMBEAU, D., DUBÉ, P.-A., DUBEAU, D., LABEL, L., *Les effets d'un entraînement physique pré-saison sur le travail et la sécurité des débroussailliers – Étude de faisabilité d'une approche de mesure*, Études et recherches / Rapport R-664, Montréal, IRSSST, 2010, 75 pages.

LAMONDE, F., RICHARD, J.-G., LANGLOIS, L., DALLAIRE, J., VINET, A., *La prise en compte des situations de travail dans les projets de conception – La pratique des concepteurs et des opérations impliqués dans un projet conjoint entre un donneur d'ouvrage et une firme de génie conseil*, Études et recherches / Rapport R-636, Montréal, IRSSST, 2010, 145 pages.

LARIVIÈRE, C., FORGET, R., BILODEAU, M., VADEBONCOEUR, R., *Évaluation de la validité de construit de tests portant sur l'endurance et les réponses réflexes des muscles du dos chez des sujets présentant une lombalgie chronique – Programme REPAR – IRSSST*, Études et recherches / Rapport R-642, Montréal, IRSSST, 2010, 60 pages.

LARIVIÈRE, C., SULLIVAN, M.J., FUNG, J., MECHERI, H., BUTLER, H., VADEBONCOEUR, R., *Lombalgie chronique – La relation entre les facteurs psychologiques associés à la douleur et certaines mesures neuromusculaires de déficiences lombaires – Programme REPAR-IRSSST*, Études et recherches / Rapport R-658, Montréal, IRSSST, 2010, 96 pages.

LAVOIE, J., MARCHAND, G., CLOUTIER, Y., BEAUDET, Y., LAVOUÉ, J., *Heating, Ventilation and Air Conditioning – Validation of System Cleaning Initiation Criteria under Real Conditions*, Studies and Research Projects / Report R-666, Montréal, IRSSST, 2010, 25 pages.

LAVOIE, J., MARCHAND, G., CLOUTIER, Y., BEAUDET, Y., LAVOUÉ, J., *Chauffage, ventilation et conditionnement d'air – Validation, dans des conditions réelles, des critères de déclenchement du nettoyage des systèmes*, Études et recherches / Rapport R-657, Montréal, IRSSST, 2010, 27 pages.

LEGENDRÉ, C., *Gestion des changements technologiques et organisationnels et représentations sociales – Impact sur la SST*, Études et recherches / Rapport R-641, Montréal, IRSSST, 2010, 125 pages.

MARCHAND, A., BOYER, R., MARTIN, M., NADEAU, C., *Facteurs prévisionnels du développement de l'état de stress post-traumatique à la suite d'un événement traumatique chez les policiers – Volet rétrospectif*, Études et recherches / Rapport R-633, Montréal, IRSSST, 2010, 120 pages.

MARCHAND, D., GIGUÈRE, D., *Les risques de troubles musculo-squelettiques aux membres supérieurs dans le secteur des services à l'automobile – Étude exploratoire*, Études et recherches / Rapport R-645, Montréal, IRSSST, 2010, 107 pages.

MARCHAND, G., LAVOIE, J., CLOUTIER, Y., RACINE, L., LACOMBE, N., BÉLANGER, É., LEMELIN, C., NADEAU, D., DESROCHES, J., *Réduction de la contamination bactérienne des fluides de coupe solubles*, Études et recherches / Rapport R-655, Montréal, IRSSST, 2010, 34 pages.

MORIN, E., GAGNÉ, C., *Making Work Meaningful – Promoting Psychological Well-Being*, Studies and Research Projects / Report R-644, Montréal, IRSSST, 2010, 20 pages.

MULLER, C., MAZER, B., SALEHI, F., AUDUSSEAU, S., TRUCHON, G., LAMBERT, J., L'ESPÉRANCE, G., CHEVALIER, G., SUZANNE, P., CLOUTIER, Y., LARIVIÈRE, P., ZAYED, J., *Évaluation de la toxicité du béryllium en fonction de la forme chimique et de la taille des particules*, Études et recherches / Rapport R-637, Montréal, IRSSST, 2010, 60 pages.

NÉLISSE, H., GAUDREAU, M.-A., BOUTIN, J., LAVILLE, F., VOIX, J., *Étude de la transmission sonore à travers les protecteurs auditifs et application d'une méthode pour évaluer leur efficacité en milieu de travail - Partie 1 – Étude terrain*, Études et recherches / Rapport R-662, Montréal, IRSSST, 2010, 106 pages.

OSTIGUY, C., CORDEIRO, R., BENSIMON, G., BARIL, M., *Identification de priorités d'intervention à partir de l'interprétation des résultats des analyses de substances chimiques produites à l'IRSSST en 2008*, Bilans de connaissances / Rapport B-078, Montréal, IRSSST, 2010, 51 pages.

OSTIGUY, C., MORIN, S., NADEAU, C., BENSIMON, G., BARIL, M., *Identification de priorités d'intervention à partir de l'interprétation des résultats des analyses de substances chimiques produites à l'IRSSST en 2007*, Bilans de connaissances / Rapport B-077, Montréal, IRSSST, 2010, 50 pages.

OSTIGUY, C., NADEAU, C., BENSIMON, G., BARIL, M., *Identification de priorités d'intervention à partir de l'interprétation des résultats des analyses de substances chimiques produites à l'IRSST en 2006*, Bilans de connaissances / Rapport B-076, Montréal, IRSST, 2010, 55 pages.

OSTIGUY, C., ROBERGE, B., WOODS, C., SOUCY, B., *Engineered Nanoparticles: Current Knowledge about Occupational Health and Safety Risks and Prevention Measures – Second Edition*, Studies and Research Projects / Report R-656, Montréal, IRSST, 2010, 153 pages.

OSTIGUY, C., ROBERGE, B., WOODS, C., SOUCY, B., *Les nanoparticules de synthèse - Connaissances actuelles sur les risques et les mesures de prévention en SST – 2<sup>e</sup> édition*, Études et recherches / Rapport R-646, Montréal, IRSST, 2010, 159 pages.

OUELLET, S., LEDOUX, É., CLOUTIER, E., FOURNIER, P.-S., *Conditions d'intégration des nouveaux travailleurs dans le secteur minier: une étude exploratoire*, Études et recherches / Rapport R-650, Montréal, IRSST, 2010, 38 pages.

PLAMONDON, A., DENIS, D., BELLEFEUILLE, S., DELISLE, A., GONELLA, M., SALAZAR, E., GAGNON, D., LARIVIÈRE, C., ST-VINCENT, M., NASTASIA, I., *Manutention – Comparaison des façons de faire entre les experts et les novices*, Études et recherches / Rapport R-663, Montréal, IRSST, 2010, 126 pages.

STATHOPOULOS, T., BODHISATTA, H., BAHLOUL, A., *Évaluation analytique de la dispersion des émissions de cheminées de toit sur les bâtiments*, Études et recherches / Rapport R-643, Montréal, IRSST, 2010, 94 pages.

ST-VINCENT, M., VÉZINA, N., LABERGE, M., GONELLA, M., LÈVESQUE, J., PETITJEAN-ROGET, T., COULOMBE, T., BEAUVAIS, A., OUELLET, S., DUBÉ, J., LÈVESQUE, S., COLE, D., *L'intervention ergonomique participative pour prévenir les TMS: ce qu'en dit la littérature francophone*, Études et recherches / Rapport R-667, Montréal, IRSST, 2010, 102 pages.

TRUCHON, M., ROSSIGNOL, M., TOUSIGNANT, M., DURAND, M.-J., SCHMOUTH, M.-È., CÔTÉ, D., *Dépistage précoce de l'incapacité chronique liée aux lombalgies – Élaboration et validation d'un questionnaire*, Études et recherches / Rapport R-639, Montréal, IRSST, 2010, 72 pages.

VIAU, S., DION, C., *Beryllium - Clean-Up Guide – Workplace Housekeeping and Decontamination*, Studies and Research Projects / Technical Data Sheet RG-652, Montréal, IRSST, 2010, 36 pages.

VIAU, S., DION, C., *Béryllium - Guide de nettoyage – Entretien ménager et décontamination des lieux de travail*, Études et recherches / Guide technique RG-638, Montréal, IRSST, 2010, 36 pages.

VYSKOCIL, A., EL MAJIDI, N., THUOT, R., BEAUDRY, C., CHAREST-TARDIF, G., TARDIF, R., GAGNON, F., SKA, B., TURCOT, A., DROLET, D., ALIYEVA, E., VIAU, C., *Effets des pics de concentration sur la neurotoxicité du styrène dans l'industrie du plastique renforcé de fibre de verre – Phase II*, Études et recherches / Rapport R-640, Montréal, IRSST, 2010, 119 pages.

WATTS, P., HEEDERIK, D., VAN ROOY, G.B.G.J. (FRITS), *A Review of Selected Literature (1995-2009) on the Carcinogenicity of Trichloroethylene (TCE)*, Studies and Research Projects / Report R-653, Montréal, IRSST, 2010, 92 pages.

WATTS, P., HEEDERIK, D., VAN ROOY, G.B.G.J. (FRITS), *Revue sélective de la littérature (1995 à 2009) sur la cancérogénicité du trichloroéthylène (TCE)*, Études et recherches / Rapport R-654, Montréal, IRSST, 2010, 93 pages.

## SCIENTIFIC PUBLICATIONS

ADEWUSI, S. A., RAKHEJA, S., MARCOTTE, P., BOUTIN, J., *Vibration transmissibility characteristics of the human hand-arm system under different postures, hand forces and excitation levels*. Journal of Sound and Vibration, vol. 329, n° 14, 2010, p. 2953-2971.

ALIYU, M., BOUKAS, E., CHINNIH, Y., *Discrete-time PI H-infinity nonlinear estimation*. IEEE Transactions on Automatic Control, vol. 55, n° 3, 2010, p. 784-790.

ALLOUI, Z., VASSEUR, P., ROBILLARD, L., BAHLOUL, A., *Onset of double-diffusive convection in a horizontal brinkman cavity*. Chemical Engineering Communications, vol. 197, n° 3, 2010, p. 387-399.

ARJMAND, N., GAGNON, D., PLAMONDON, A., SHIRAZI-ADL, A., LARIVIÈRE, C., *A comparative study of two trunk biomechanical models under symmetric and asymmetric loading*. Journal of Biomechanics, vol. 43, n° 3, 2010, p. 485-491.

BELZILE, M., LEMAY, S. P., GODBOUT, S., CÔTÉ, C., LAVOIE, J., *Qualité de l'air dans les bâtiments pour l'élevage de veaux de lait*. Canadian Biosystems Engineering, vol. 52, no 5, 2010, p. 5.1-5.10.

BERTHET, A., DE BATZ, A., TARDIF, R., CHAREST-TARDIF, G., TRUCHON, G., VERNEZ, D., DROZ, P. O., *Impact of biological and environmental variabilities on biological monitoring of occupational exposure – An approach using toxicokinetic models*. Journal of Occupational and Environmental Hygiene, vol. 7, n° 3, 2010, p. 177-184.

BIKOND NKOMA, G., LEDUC, F., JOUAD, L., BOISSONNEAULT, G., *Electron microscopy analysis of histone acetylation and DNA strand breaks in mouse elongating spermatids using a dual labelling approach*. Andrologia, vol. 42, n° 5, 2010, p. 322-325.

BIZET, I., LAURENCELLE, L., LEMOYNE, J., LAROCHE, R., TRUDEAU, F., *Career changes among physical educators: searching for new goals or escaping a heavy task load?*. Research Quarterly for Exercise and Sport, vol. 81, n° 2, 2010, p. 224-232.

BOILEAU, P.-É., RAKHEJA, S., SEIDEL, H., MAEDA S., *Whole-body vibration injuries* Industrial Health (special issue), vol. 48, n° 5, 2010, p. 517.

BORSKY, T., FIALA, Z., VYSKOCIL, A., BORSKA, L., DROLET, D., LEMAY, F., KREMLACEK, J., KRAJAK, V., RANNA, D., *Health risk evaluation of exposure to mixture of substances in various workplaces*. Toxicology Letters, vol. 196, suppl. 1, 2010, p. S95-S96.

BUTLER, H.L., LARIVIÈRE, C., HUBLEY-KOZEY, C.L., SULLIVAN, M.J.L., *Directed attention alters the temporal activation patterns of back extensors during trunk flexion-extension in individuals with chronic low back pain*. European Spine Journal, vol. 19, n° 9, 2010, p. 1508-1516.

CHAMPOUX, D., BRUN, J.-P., *Dispositions, capacités et pratiques de SST dans les petites entreprises: opinions de patrons, d'employés et d'intervenants en SST au Québec*. Pistes (Perspectives interdisciplinaires sur le travail et la santé), vol. 12, n° 2, 2010, 19 p.

CHINNIH, Y., *Equipment lockout: a review of written lockout programs in Québec*. Professional Safety, vol. 55, n° 2, 2010, p. 38-43.

CÔTÉ, D., COUTU, M.-F., *A critical review of gender issues in understanding prolonged disability related to musculoskeletal pain: how are they relevant to rehabilitation?* Disability & Rehabilitation, vol. 32, n° 2, 2010, p. 87-102.

COUTU, M.-F., BARIL, R., DURAND, M.J., CÔTÉ, D., ROULEAU, A., CADIEUX, G., *Transforming the meaning of pain: an important step for the return to work*. Work: A Journal of Prevention, Assessment & Rehabilitation, vol. 35, n° 2, 2010, p. 209-219.

DE MARCELLIS-WARIN, N., TRÉPANIÈRE, M., FAVRE, S., *A bi-level representational model of hazardous material supply chains*. International Journal of Logistics Systems and Management, vol. 6, n° 4, 2010, p. 380-396.

DESBIENS, J.F., FILLION, L., *Validation d'une mesure de perception des compétences en soins infirmiers palliatifs*. Journal of palliative care, vol. 26, n° 3, 2010, p. 216.

DOLEZ, P., BODILA, N., LARA, J., TRUCHON, G., *Personal protective equipment against nanoparticles*. International Journal of Nanotechnology, vol. 7, n° 1, 2010, p. 99-117.

DOLEZ, P., GAUVIN, C., LARA, J., VU-KHANH, T., *The effect of protective glove exposure to industrial contaminants on their resistance to mechanical risks*. International Journal of Occupational Safety and Ergonomics, vol. 16, n° 2, 2010, p. 169-183.

DONG, R.G., RAKHEJA, S., MCDOWELL, T.W., WELCOME, D.E., WU, J.Z., *Estimation of the biodynamic responses distributed at fingers and palm based on the total response of the hand-arm system*. International Journal of Industrial Ergonomics, vol. 40, n° 4, 2010, p. 425-436.

DUMAS, G.A., LEGER, A., PLAMONDON, A., CHARPENTIER, K.M., PINTI, A., MCGRATH, M., *Fatigability of back extensor muscles and low back pain during pregnancy*. Clinical Biomechanics, vol. 25, n° 1, 2010, p. 1-5.

EAKIN, J.M., CHAMPOUX, D., MACEACHEN, E., *Health and safety in small workplaces: refocusing upstream*. Canadian Journal of Public Health, vol. 101, suppl. 1, 2010, p. S29-S33.

EL MAJIDI, N., VYSKOCIL, A., THUOT, R., BEAUDRY, C., CHAREST-TARDIF, G., TARDIF, R., GAGNON, F., SKA, B., TURCOT, A., VIAU, C., *Effects of peak concentrations on the neurotoxicity of styrene in workers*. Toxicology Letters, vol. 196, suppl. 1, 2010, p. S71.

GAYMU, J., BUSQUE, M.-A., LÉGARÉ, J., DÉCARIE, Y., VÉZINA, S., KEEFE, J., *What will the family composition of older persons be like tomorrow? A comparison of Canada and France*. Canadian Journal on Aging / La Revue canadienne du vieillissement, vol. 29, n° 1, 2010, p. 57-71.

GILBERT, Y., VEILLETTE, M., DUCHAINE, C., *Metalworking fluids biodiversity characterization*. Journal of Applied Microbiology, vol. 108, n° 2, 2010, p. 437-449.

GILBERT, Y., VEILLETTE, M., MÉRIAUX, A., LAVOIE, J., CORMIER, Y., DUCHAINE, C., *Metalworking fluid-related aerosols in machining plants*. Journal of Occupational and Environmental Hygiene, vol. 7, n° 5, 2010, p. 280-289.

HAJRA, B., STATHOPOULOS, T., BAHLOUL, A., *Assessment of pollutant dispersion from rooftop stacks: ASHRAE, ADMS and wind tunnel simulation*. Building and Environment, vol. 45, n° 12, 2010, p. 2768-2777.

KHETTABI, R., SONGMENE, V., MASOUNAVE, J., *Effects of speeds, materials, and tool rake angles on metallic particle emission during orthogonal cutting*. Journal of Materials Engineering and Performance, vol. 19, n° 6, 2010, p. 767-775.

KHETTABI, R., SONGMENE, V., ZAGHBANI, I., MASOUNAVE, J., *Modeling of particle emission during dry orthogonal cutting*. Journal of Materials Engineering and Performance, vol. 19, n° 6, 2010, p. 776-789.

KORDESTANI, A., RAKHEJA, S., MARCOTTE, P., PAZOOKI, A., JURAS, D., *Analysis of ride vibration environment of soil compactors*. SAE International Journal of Commercial Vehicles, vol. 3, n° 1, 2010, p. 259-272.

LABRÈCHE, F., GOLDFERG, M.S., VALOIS, M.-F., NADON, L., *Postmenopausal breast cancer and occupational exposures*. Occupational and Environmental Medicine, vol. 67, n° 4, 2010, p. 263-269.

LANGLOIS, L., DUPUIS, R., MARCOUX, H., TRUCHON, M., FILLION, L., *Les dilemmes éthiques vécus par les infirmières aux soins intensifs dans le contexte de soins de fin de vie*. Revue éthique publique, vol. 11, n° 2, 2010, p. 20-30.

LARIVIÈRE, C., BILODEAU, M., FORGET, R., VADEBONCOEUR, R., MECHELI, H., *Poor back muscle endurance is mediated by pain catastrophizing in patients with chronic low back pain*. Spine, vol. 35, n° 22, 2010, p. E1178-E1186.

LARIVIÈRE, C., FORGET, R., VADEBONCOEUR, R., BILODEAU, M., MECHELI, H., *The effect of sex and chronic low-back pain on back muscle reflex responses*. European Journal of Applied Physiology, vol. 109, n° 4, 2010, p. 577-590.

LARIVIÈRE, C., DA SILVA, R. A., ARSENAULT, B., NADEAU, S., PLAMONDON, A., VADEBONCOEUR, R., *Specificity of a back muscle exercise machine in healthy and low back pain subjects*. Medicine & Science in Sports and Exercise, vol. 42, n° 3, 2010, p. 592-599.

- LARIVIÈRE, C., TREMBLAY, G., NADEAU, S., HARRABI, L., DOLEZ, P., VU-KHANH, T., LARA, J., *Do mechanical tests of glove stiffness provide relevant information relative to their effects on the musculoskeletal system? A comparison with surface electromyography and psychophysical methods.* Applied Ergonomics, vol. 41, n° 2, 2010, p. 326-334.
- LAVOIE, J., BAHLOUL, A., CLOUTIER, Y., *Cleaning initiation criteria for heating, ventilation and air conditioning (HVAC) systems in non industrial buildings.* ASHRAE Transactions, vol. 116, part 2, p. 13-20.
- LAVOIE, J., GUERTIN, S., TRUDEL, M., FLION, M., *Collecte d'ordures ménagères: Aménagement optimal du camion avec bras assisté.* Vecteur environnement, vol. 43, n° 4, 2010, p. 30-36.
- LEMIÈRE, C., D'ALPAOS, V., CHABOLLEZ, S., CÉSAR, M., WATTIEZ, M., CHIRY, S., VADENPLAS, O., *Investigation of occupational asthma: sputum cell counts or exhaled nitric oxide?* Chest, vol. 137, n° 3, 2010, p. 617-622.
- LEROUX, M.-H., DE MARCELLIS-WARIN, N., TRÉPANIÉ, M., *Safety management in hazardous materials logistics.* Transportation Letters: The International Journal of Transportation Research, vol. 2, n° 1, 2010, p. 13-25.
- LÉTOURNEAU, V., MÉRIAUX, A., GOYER, N., CHAKIR, J., CORMIER, Y., DUCHAINE, C., *Biological activities of respirable dust from Eastern Canadian peat moss factories.* Toxicology in Vitro, vol. 24, n° 4, 2010, p. 1273-1278.
- LÉTOURNEAU, V., DUCHAINE, C., DESLAURIERS, D., CÔTÉ, C., LETELLIER, A., TOPP, E., MASSE M., *Presence of zoonotic pathogens in physico-chemically characterized manures from hog finishing houses using different production systems.* Bioresource Technology, vol. 101, n° 11, 2010, p. 4048-4055.
- LÉTOURNEAU, V., NEHMÉ, B., *Impact of production systems on swine confinement buildings bioaerosols.* Journal of Occupational and Environmental Hygiene, vol. 7, n° 2, 2010, p. 94-102.
- LI, L., AUBERTIN, M., *Implementation and application of a new elastoplastic model based on a multiaxial criterion to assess the stress state near underground openings.* International Journal of Geomechanics, vol. 10, n° 1, 2010, p. 13-21.
- MA, S., BOUKAS, E.-K., CHINNIAH, Y., *Stability and stabilization of discrete-time singular Markov jump systems with time-varying delay.* International Journal of Robust and Nonlinear Control, vol. 20, n° 5, 2010, p. 531-543.
- MAGHNI, K., MALO, J.L., L'ARCHEVÈQUE, J., CASTELLANOS, L., GAUTRIN, D., *Matrix metalloproteinases, IL-8 and glutathione in the prognosis of workers exposed to chlorine.* Allergy, vol. 65, n° 6, 2010, p. 722-730.
- MANDAPURAM, S., RAKHEJA, S., BOILEAU, P.-É., MAEDA, S., *Apparent mass and seat-to-head transmissibility responses of seated occupants under single and dual-axis horizontal vibration.* Industrial Health, vol. 48, n° 5, 2010, p. 698-714.
- MARCHAND, G., LAVOIE, J., RACINE, L., LACOMBE, N., CLOUTIER, Y., BÉLANGER, E., LEMELIN, C., DESROCHES, J., *Evaluation of bacterial contamination and control methods in soluble metal working fluids.* Journal of Occupational & Environmental Hygiene, vol. 7, n° 6, 2010, p. 358-366.
- MARCOTTE, P., BEAUGRAND, S., BOUTIN, J., LARUE, C., *Design and evaluation of a suspension seat to reduce vibration exposure of subway operators: a case study.* Industrial Health, vol. 48, n° 5, 2010, p. 715-724. ([http://www.jniosh.go.jp/en/indu\\_hel/pdf/IH\\_48\\_5\\_715.pdf](http://www.jniosh.go.jp/en/indu_hel/pdf/IH_48_5_715.pdf)).
- MARCOTTE, P., BOUTIN, J., JASINSKI, J., *Development of a hand-arm mechanical analogue for evaluating chipping hammer vibration emission values.* vol. 329, n° 10, 2010, p. 1968-1980.
- MOSTOFI, R., WANG, B., HAGHIGHAT, F., BAHLOUL, A., LARA, J., *Performance of mechanical filters and respirators for capturing nanoparticles – Limitations and future direction.* Industrial Health, vol. 48, n° 3, 2010, p. 296-304.
- MULLER, C., AUDUSSEAU, S., SALEHI, F., TRUCHON, G., CHEVALIER, G., MAZER, B., KENNEDY, G., ZAYED, J., *Beryllium contamination and exposure monitoring in an inhalation laboratory setting.* Toxicology and Industrial Health, vol. 26, n° 1, 2010, p. 39-45.
- MULLER, C., MAZER, B., SALEHI, F., AUDUSSEAU, S., CHEVALIER, G., TRUCHON, G., LARIVIÈRE, P., PAQUETTE, V., LAMBERT, J., ZAYED, J., *Urinary levels, tissue concentrations and lung inflammation after nose-only exposure to three different chemical forms of beryllium.* Journal of Applied Toxicology, vol. 30, n° 5, 2010, p. 411-415.
- NGUYEN, C.T., DOLEZ, P., VU-KHANH, T., GAUVIN, C., LARA, J., *Resistance of protective gloves materials to puncture by medical needles.* Journal of ASTM International, vol. 7, n° 5, 2010, 16 p.
- PAQUETTE, V., LARIVIÈRE, P., CORMIER, D., TRUCHON, G., ZAYED, J., VAN TRA, H., *Development and validation of an analytical method for ultra-trace beryllium in biological matrices.* Journal of Analytical Toxicology, vol. 34, n° 9, 2010, p. 562-570.
- PLAMONDON, A., DENIS, D., DELISLE, A., LARIVIÈRE, C., SALAZAR, E., *Biomechanical differences between expert and novice workers in a manual material handling task.* Ergonomics, vol. 53, n° 10, 2010, p. 1239-1253.
- PRANESH, A., RAKHEJA, S., DEMONT, R., *Influence of support conditions on vertical whole-body vibration transmission properties through the seated human body.* Industrial Health, vol. 48, n° 5, 2010, p. 682-697.
- PREMJJI, S., DUGUAY, P., MESSING, K., LIPPEL, K., *Are immigrants, ethnic and linguistic minorities over-represented in jobs with a high level of compensated risk? Results from a Montréal, Canada study using census and workers' compensation data.* American Journal of Industrial Medicine, vol. 53, n° 9, 2010, p. 875-885.
- RAKHEJA, S., DONG, R.G., PATRA, S., BOILEAU, P.-É., MARCOTTE, P., WARREN, C., *Biodynamics of the human body under whole-body vibration: synthesis of the reported data.* International Journal of Industrial Ergonomics, vol. 40, n° 6, 2010, p. 710-732.
- ROBITAILLE, N., GUIMOND, E., BOUCHER, A., *Intergenerational ethnic mobility among canadian aboriginal populations in 2001.* Canadian Studies in Population, vol. 37, n° 1-2, 2010, p. 151-174. (<http://www.canpopsoc.org/journal/2010/CSP/v37n1-2p151.pdf>).
- SGARD, F., NÉLISSE, H., ATALLA, N., AMEDIN, C.K., ODDO, R., *Prediction of the acoustical performance of enclosures using a hybrid statistical energy analysis: image source model.* Journal of the Acoustical Society of America, vol. 127, n° 2, 2010, p. 784-795.
- SMITH, P.M., STOCK, S.R., MCLEOD, C.B., KOEHOORN, M., MARCHAND, A., MUSART, C.A., *Research opportunities using administrative databases and existing surveys for new knowledge in occupational health and safety in Canada, Quebec, Ontario and British Columbia.* Canadian Journal of Public Health, vol. 101, suppl. 1, 2010, p. S46-S52.
- STOCK, S., OSTRY, A., LABRÈCHE, F., *Canadian occupational health and safety research in action: advances and challenges (editorial).* Canadian Journal of Public Health, vol. 101, suppl. 1, 2010, p. S3-S4.
- SULLIVAN, M.J.L., LARIVIÈRE, C., SIMMONDS, M., *Activity-related summation of pain and functional disability in patients with whiplash injuries.* Pain, vol. 151, n° 2, 2010, p. 440-446.
- TRUCHON, M., CÔTÉ, D., SCHMOUTH, M.E., LEBLOND, J., FILLION, L., DIONNE, C.E., *Validation of an adaptation of the stress process model for predicting low-back pain related long-term disability outcomes: a cohort study.* Spine, vol. 35, n° 13, 2010, p. 1307-1315.
- VAN EERD, D., COLE, D., IRWIN, E., MAHOOD, Q., KEOWN, K., THÉBERGE, N., VILLAGE, J., ST-VINCENT, M., CULLEN, K., *Process and implementation of participatory ergonomic interventions: a systematic review.* Ergonomics, vol. 53, n° 10, 2010, p. 1153-1166.
- VERREULT, D., LÉTOURNEAU, V., GENDRON, L., MASSÉ, D., GAGNON, C.A., DUCHAINE, C., *Airborne porcine circovirus in Canadian swine confinement buildings.* Veterinary Microbiology, vol. 141, n° 3-4, 2010, p. 224-230.
- WANG, W., BAZRGARI, B., SHIRAZI-ADL, A., RAKHEJA, S., BOILEAU, P.-É., *Biodynamic response and spinal load estimation of seated body in vibration using finite element modeling.* Industrial Health, vol. 48, n° 5, 2010, p. 557-564.

#### PEER-REVIEWED ARTICLES PUBLISHED IN CONFERENCE PROCEEDINGS

- ACTEAU, G., CARRIER-LECLERC, A., LEDUC, F., SIMARD, O., ARGUIN, M., BOISSON-NEAULT, G., *Identification of the DNA damage response pathway to endogenous strand breaks in spermatids as a new male-driven source of genetic instability.* In Symposium du Réseau québécois en reproduction / RQR (3<sup>e</sup>: 16-17 novembre, 2010: Québec, Canada), 2010.
- ADEWUSI, S., RAKHEJA, S., MARCOTTE, P., *Biomechanical model of the hand-arm system to simulate distributed biodynamic responses.* In American Conference on Human Vibration (3<sup>rd</sup>: June 1-4, 2010: Iowa, USA), 2010 (<http://www.uiowa.edu/~confinst/achv/Abstracts-full.pdf>).
- AMICHI, K., ATALLA, N., SGARD, F., *Sound radiation of orthotropic curved sandwich structures using a mixed boundary element/finite element approach.* In International Congress on Acoustics (20<sup>th</sup>: August 23-27, 2010: Sydney, Australia), 2010.
- AMICHI, K., SGARD, F., NÉLISSE, H., ATALLA, N., LAVILLE, F., *Effects of baffles on the sound power radiated by box-shaped structures.* In International congress on Acoustics (20<sup>th</sup>: August 23-27, 2010: Sydney, Australia), 2010.
- ARJMAND, N., GAGNON, D., PLAMONDON, A., SHIRAZI-ADL, A., LARIVIÈRE, C., *Two trunk biomechanical models estimate quite different muscle forces and spine loads (Poster).* In Annual Meeting of Orthopaedic Research Society (56<sup>th</sup>: March 6-9, 2010: New Orleans, USA), 2010 #1485.
- ARJMAND, N., GAGNON, D., PLAMONDON, A., SHIRAZI-ADL, A., LARIVIÈRE, C., *Comparison of two trunk biomechanical models in lifting: evaluation of assumptions and estimations.* In Computer Methods in Biomechanics and Biomedical Engineering / CMBBE (October 9-11, 2010: Stuttgart, Germany), 2010.
- BAHLOUL, A., HAGHIGHAT, F., MOSTAFI, R., WANG, B., LARA, J., *Development of experimental set-up to test the efficiency of filters against nanoparticles.* In Sustainable Energy Use in Buildings: REHVA World Congress: Clima 2010 (10<sup>th</sup>: May 9-12, 2010: Antalya, Turkey), 2010.
- BAHLOUL, A., STATHOPOULOS, T., HAJRA, B., *Dispersion of effluent from building roof stacks: Comparison of various models, CFD and wind tunnel approach.* In Sustainable Energy Use in Buildings: REHVA World Congress: Clima 2010 (10<sup>th</sup>: May 9-12, 2010: Antalya, Turkey), 2010.
- BEAUGRAND, S., DENIS, D., LARUE, C., BOUDREAU, H., *L'apprentissage des concepts de stabilité des chariots élévateurs : défis des formateurs, nouvelle approche de formation et adaptation.* In Fiabilité, adaptation et résilience: Congrès de la Société d'Ergonomie de Langue Française / SELF (45<sup>e</sup>: 13-15 septembre, 2010: Liège, France), 2010.
- BLAIS-LECOURS, P., MARSOLAI, D., VEILLETTE, M., CORMIER, Y., BEAULIEU, M.-J., MÉRIAUX, A., FORSTER, R., DUCHAINE, C., *Archaea in bioaerosols: an unsuspected airborne pro-inflammatory agent.* In Rural Health: Connecting Research and Policy: Conference of the Canadian Rural Health Research Society (9<sup>th</sup>: September 23-25, 2010: Fredericton, Canada), 2010.
- BLAIS-LECOURS, P., MARSOLAI, D., VEILLETTE, M., CORMIER, Y., BEAULIEU, M.-J., MÉRIAUX, A., FORSTER, R., DUCHAINE, C., *Archaeobacteria in bioaerosols: an unsuspected airborne pro-inflammatory agent.* In European Respiratory Society Annual Congress (September 18-22, 2010: Barcelona, Spain), 2010.

- BORSKY, T., FIALA, Z., VYSKOCIL, A., BORSKA, L., DROLET, D., LEMAY, F., KREMLACEK, J., KRAJAK, V., RANNA, D., *Health risk evaluation of exposure to mixture of substances in various workplaces (Poster)*. In International Congress of Toxicology / IUTOX (12<sup>th</sup>: July 19-23, 2010: Barcelona, Spain), 2010.
- BOUCHER, A., DUGUAY, P., *Les lésions professionnelles indemnisées référées en réadaptation: Portrait statistique de la situation au Québec en 2005-2007 (Affiche)*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- BOUDREAULT, H., *La conception d'une boîte à outils didactiques pour le développement d'un environnement d'apprentissage par une didactique participative: une expérience d'intégration du concept de stabilité en santé et sécurité au travail chez les formateurs d'opérateurs de chariots élévateurs*. In Robotique pédagogique: Colloque francophone de robotique pédagogique (11<sup>e</sup>: 21-23 juillet 2010: Liban), 2010.
- BURLET-VIENNEY, D., JOCELYN, S., CHINNIH, Y., DAIGLE, R., MASSÉ, S., *"Verifying the contents of lockout programs" and "Safeguarding of hydraulic power press brakes": two guides for transferring knowledge on machine safety to enterprises in Québec*. In International Conference on the Safety of Industrial Automated Systems / SIAS (6<sup>th</sup>: June 14-15, 2010: Tampere Hall, Finland), 2010.
- BUSQUE, M.-A., DUGUAY, P., *Indicateurs de fréquence-durée et de gravité des lésions professionnelles indemnisées par la CSST selon la taille d'entreprise, Québec, 2004-2006 (Affiche)*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- BUTLER, H.L., HUBLEY-KOZEY, C.L., LARIVIÈRE, C., SULLIVAN, M.J.L., *Back extensor temporal activation patterns during trunk flexion-extension: effect of attention, sex and pain severity in low back pain patients*. In World Congress on Pain (13<sup>th</sup>: August 29-September 2, 2010: Montreal, Canada), 2010.
- CARRIER-LECLERC, A., ACTEAU, G., LEDUC, F., ARGUIN, A., BOISSONNEAULT, G., *The DNA repair pathway in spermids, a possible cause of male infertility*. In Innovations in Gender, Sex, and Health Research Conference (November 21-22, 2010: Toronto, Canada), 2010.
- CASTEL, F., SGARD, F., ATALLA, N., *Impact of acoustic leakage on the absorption of mono layer and two-layer porous materials*. In Proceedings of the Sixth International Conference: Automotive and Railroad Comfort / SIA (6<sup>th</sup>: October 21-22, 2010: Le Mans, France), 2010.
- CHAMPOUX, D., BEAUVAIS, A., BARIL, R., *OSH policy, politics and structures in Quebec: Effects on interventions in Québec*. In La santé des travailleurs dans un monde du travail en mutation: Congrès en santé et sécurité du travail / ACRST-RRSSTQ (28-29 mai, 2010: Toronto, Canada), 2010.
- CHAMPOUX, D., *Conflicting rationalities in SBs' OHS practices and interventions of OHS practitioners in Québec*. In La santé des travailleurs dans un monde du travail en mutation: Congrès en santé et sécurité du travail / ACRST-RRSSTQ (28-29 mai, 2010: Toronto, Canada), 2010.
- CHAVEZ, M., HAJRA, B., STATHOPOULOS, T., BAHLOUL, A., *Near-field pollutant dispersion in the built environment by CFD and wind tunnel simulations*. In Proceedings of the Fifth International Symposium on computational Wind Engineering / CWE2010 (5<sup>th</sup>: May 23-27, 2010: Chapel Hill, USA), 2010.
- CHINNIH, Y., *Safety of workers during maintenance of machines, equipment and processes: a canadian perspective*. In International Congress on Condition Monitoring and Diagnostic Engineering Management / COMADEM (23<sup>rd</sup>: June 28-July 2, 2010: Nara, Japan), 2010, p. 871-878.
- CLOUTIER, E., LEDOUX, É., BOURDOUXHE, M., DAVID, H., GAGNON, I., OUELLET, F., *Private agency nurses and public network nurses: different work and risks*. In The Changing World of Work: International Conference on psychosocial Factors at Work / ICOH-WOPFS (4<sup>th</sup>: June 14-17, 2010: Amsterdam, The Netherlands), 2010.
- CLOUTIER, Y., NOËL, A., PLAMONDON, P., L'ESPÉRANCE, G., DION, C., TRUCHON, G., ZAYED, J., *Theoretical and practical aspects of a comparison between cascade impactors (MOUDI, ELP) and electron microscopy results for nanoparticles analysis*. In American Association for Aerosol Research Conference / AAAR (29<sup>th</sup>: October 25-29, 2010: Portland, USA), 2010 (<http://aaarabstracts.com/2010/viewabstract.php?paper=180>).
- CÔTÉ, D., *Cultural issues in disability prevention, rehabilitation and return-to-work process*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- CÔTÉ, D., *The influence of ethnocultural belonging on rehabilitation process following work injury: a critical view*. In La sociologie en mouvement: Congrès de l'Association internationale de sociologie (17<sup>e</sup>: 11-17 juillet 2010: Göteborg, Suède), 2010.
- COUÏU, M.-F., DURAND, M.J., CORBIÈRE, M., NASTASIA, I., LEMIEUX, P., LOISEL, P., *Psychological distress among government employees: a mixed approach*. In International Congress of Applied Psychology (27<sup>th</sup>: July 11-16, 2010: Melbourne, Australia), 2010.
- DEBIA, M., KRISHNAN, K., *Quantitative property-property relationship (QPPRs) for computing occupational exposure limits and vapour hazard ratios (VHRs) of organic solvents (Poster)*. In International Workshop on Quantitative Structure-Activity Relationships in Environmental and Health Sciences / QSAR (14<sup>th</sup>: May 24-28, 2010: Montréal, Canada), 2010.
- DEBIA, M., KRISHNAN, K., *Prediction in silico de valeurs limites d'exposition pour les solvants organiques*. In Le lien entre les expositions précoces et les effets tardifs: science nouvelle, outils et modes d'action: Symposium annuel de la Société de toxicologie du Canada / STC (42<sup>e</sup>: 5-7 décembre, 2010: Montréal, Canada), 2010.
- DELISLE, A., TOULOUSE, G., SALAZAR, E., DUHALDE, D., COMTOIS, A.-S., *The influence of perceived work demands on trapezius activity among emergency callcentre workers*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010, p. 275.
- DELISLE, A., PLAMONDON, A., SALAZAR, E., DENIS, D., *Are experienced workers more stable when handling loads?* In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010, p. 192.
- DESBIENS, J.F., FILLION, L., *Validation d'une mesure de perception des compétences en soins infirmiers palliatifs*. In Congrès international sur les soins palliatifs (18<sup>e</sup>: 5-8 octobre, 2010: Montréal, Canada), 2010.
- DESBIENS, J.F., SHERMAN, D., FILLION, L., *Translation and trans-cultural adaptation from French to English of an instrument measuring self-perceived palliative care nursing competencies*. In Espoir, sens et science pour des soins de qualité en psycho-oncologie et en soins palliatifs: congrès international en oncologie psychosociale (12<sup>e</sup>: 27-29 mai, 2010: Québec, Canada), 2010.
- DJEBARA, A., KHETTABI, R., KOUAM, J., SONGMENE, V., *Experimental investigation on ultrafine particles emission during dry machining using statistical tools*. In Proceedings of the International Conference on Nanotechnology: Fundamentals and Applications (August 4-6, 2010: Ottawa, Canada), 2010, paper 490, p. 1-10.
- DJEBARA, A., KHETTABI, R., KOUAM, J., SONGMENE, V., *Comparison of the capability of peak function in describing real condensation particle counter profiles*. In Proceedings of the 2nd International Conference on Lasers & Plasma Applications in Materials Science / LAPAMS'10 (2<sup>nd</sup>: November 27-30, 2010: Algier, Algeria), 2010, p. 40-44.
- DOLEZ, P., VINCHES, L., VU-KHANH, T., WILKINSON, K., PLAMONDON, P., *Development of a test method for the evaluation of the efficiency of protective gloves against nanoparticles in conditions simulating occupational use*. In NanoSafe 2010 (November 16-18, 2010: Grenoble, France), 2010.
- DONG, R.G., WELCOME, D.E., MCDOWELL, T.W., XU, X.S., WU, J.Z., RAKHEJA, S., *Mechanical impedances distributed at the fingers and palm of the human hand subjected to 3-D vibrations*. In American Conference on Human Vibration (3<sup>rd</sup>: June 1-4, 2010: Iowa, USA), 2010.
- DURAND, M.-J., BERTHELLETTE, D., LOISEL, P., *Lessons learned from evaluative research in the field of work rehabilitation*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.
- DURAND, M.-J., VÉZINA, N., LOISEL, P., RICHARD, M.C., *Developing a guide for measuring the concept of margin of manoeuvre*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.
- DUVAL, A., RONDEAU, J.F., DEJAEGER, L., SGARD, F., ATALLA, N., *Diffuse field absorption coefficient simulation of porous materials in small reverberant rooms: finite size and diffusivity issues*. In Congrès français d'acoustique (10<sup>e</sup>: 12-16 avril: Lyon, France), 2010.
- FILLION, L., LAVOIE, M., *Rôle changeant de l'infirmière: à la recherche de la dignité. De l'autonomie et du sens*. In Congrès international sur les soins palliatifs (18<sup>e</sup>: 5-8 octobre, 2010: Montréal, Canada), 2010.
- FILLION, L., *Soins aux mourants: Impact du milieu de travail sur la satisfaction et le bien-être des infirmières*. In Journée scientifique «Pratique clinique et recherche en soins palliatifs: état des lieux et perspectives» (11 mai, 2010: Neuchâtel, Suisse), 2010.
- FILLION, L., *La recherche en oncologie psychosociale et spirituelle*. In Conférence nationale pour vaincre le cancer (22-23 avril, 2010: Montréal, Canada), 2010.
- GAGNÉ, C., LAZURE, L., DENIS, D., *From theory to practice: the drivers needed to ensure knowledge translation in research environment*. In International conference Triple Helix 8 (8<sup>th</sup>: October 20-22, 2010: Madrid, Spain), 2010.
- GAGNÉ, S., TREMBLAY, P., FOCZENY, F., HOULE, R., LANGLOIS, E., BATEMAN, K., PICARD, P., *High-throughput LDTD384-MS/MS for drug metabolism and pharmacokinetic studies*. In ASMS Conference on Mass Spectrometry (58<sup>th</sup>: May 23-27: Salt Lake City, U.S.A.), 2010.
- GAGNON, M., *Une veille scientifique en SST accessible sur le Web*. In Imaginer de nouveaux partenariats: Congrès des milieux documentaires du Québec (3-5 novembre, 2010: Montréal, Canada), 2010, ([https://www.milieuxdoc.ca/cm2s\\_content/\\_milieux-documentaire/document/milieux-documentaires-1290179310-Atelier38\\_Gagnon.ppt](https://www.milieuxdoc.ca/cm2s_content/_milieux-documentaire/document/milieux-documentaires-1290179310-Atelier38_Gagnon.ppt)).
- GAGNON, D., ARJMAND, N., PLAMONDON, A., SHIRAZI-ADL, A., LARIVIÈRE, C., *A comparison between single- and multi-joint emg- assisted by optimization lumbar spine models*. In Congress of the International Society of Electrophysiology & Kinesiology / ISEK (18<sup>th</sup>: June 16-19, 2010: Aalborg, Denmark), 2010.
- GAGNON, D., PLAMONDON, A., SALAZAR, E., DELISLE, A., DENIS, D., LARIVIÈRE, C., ST-VINCENT, M., NASTASIA, I., *Experienced manual materials handlers are more efficient to reduce lumbar spine loading*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010, p. 186.
- GAUTHIER, F., GÉLINAS, D., MARCOTTE, P., *Vibration of portable orbital sanders and its impact on the development of work-related musculoskeletal disorders in the furniture industry*. In International Conference on Computers & Industrial Engineering (40<sup>th</sup>: July 25-28, 2010: Hyogo, Japan), 2010.

- GAUTHIER, F., MOULET, F., CHINNIH, Y., HEALY, N., STACEY, N., *A comparative analysis of risk estimation tools for industrial machines*. In International Conference on the Safety of Industrial Automated Systems / SIAS (6<sup>th</sup>): June 14-15, 2010: Tampere Hall, Finland), 2010.
- GÉLINAS, C., ROBITAILLE, M.-A., FILLION, L., TRUCHON, M., *A better understanding of stress factors experienced by nurses when providing end-of-life care in the intensive care unit (ICU)*. In Espoir, sens et science pour des soins de qualité en psycho-oncologie et en soins palliatifs: congrès international en oncologie psychosociale (12<sup>e</sup>): 27-29 mai, 2010: Québec, Canada), 2010.
- GONELLA, M., DENIS, D., ST-VINCENT, M., LORTIE, M., *Utiliser des règles d'action pour observer le travail des manutentionnaires: un moyen de mettre en lumière*. In Unis par une vision commune: Congrès de l'Association canadienne d'ergonomie / ACE, (41<sup>e</sup>): 4-7 octobre, 2010: Kelowna, Canada), 2010.
- GONELLA, M., DENIS, D., ST-VINCENT, M., LORTIE, M., DION, M.H., *Comment des règles d'action peuvent-elles aider à poser un nouveau regard sur la manutention?* In Unis par une vision commune: 41<sup>e</sup> Congrès de l'ACE (41<sup>e</sup>): 4-7 octobre, 2010: Kelowna, Canada), 2010.
- GRAVEL, S., LORTIE, M., BILODEAU, H., *La résilience des entreprises face aux dilemmes de gestion des problèmes de santé et de sécurité au travail ayant une incidence sur la gestion des ressources humaines*. In Fiabilité, adaptation et résilience: Congrès de la Société d'Ergonomie de Langue Française / SELF (45<sup>e</sup>): 13-15 septembre, 2010: Liège, France), 2010.
- GRAVEL, S., RHÉAUME, J., *Strategies to develop occupational health and safety measures in small businesses employing immigrant workers in Montreal*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- HANDRIGAN, G. A., PLAMONDON, A., SIMONEAU, M., TEASDALE, N., CORBEIL, P., *Body weight influences lifting performance*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>): August 29 - September 3, 2010: Angers, France), 2010, p. 241.
- HEALY, N., STACEY, N., GAUTHIER, F., CHINNIH, Y., *Theoretical evaluation of methods for the qualitative estimation of risk*. In Risk, Governance and Accountability: Society for Risk Analysis Annual Meeting / SRA Europe (19<sup>th</sup>): June 21-23, 2010: London, UK), 2010.
- HUANG, X., RAKHEJA, S., *Performance analysis of a relative motion based magneto-rheological damper controller for suspension seats*. In International Design Engineering Technical Conferences & Computers and Information in Engineering Conference / ASME 2010 (August 15-18, 2010: Montreal, Canada), 2010, (<http://www.asmeconferences.org/IDETC2010/PaperAccepted.cfm?noToolbar=yes>).
- JOSEPH, M., BACON, S.L., DITTO, B., FAVREAU, H., LAVOIE, K.L., *Depression in patients under investigation for occupational asthma: is there a relationship to lung function, and blood and sputum cell differentials?* In Annual Meeting of the International Society for the Advancement of Respiratory Psychophysiology (17<sup>th</sup>): September 26-27, 2010: New York, USA), 2010.
- KHETTABI, R., MASOUNAVE, J., SONGMENE, V., *Influence of machining processes on particles emission*. In Annual Conference of Metallurgists / COM 2010 (49<sup>e</sup>): October 3-6, 2010: Vancouver, Canada), 2010, p. 277-288.
- KHETTABI, R., DJEBARA, A., SONGMENE, V., *Characterization and control of micro and nanoparticles produced during dry cutting*. In Converging Towards Sustainability: The Safety, Health and Environment World Congress / SHEWC'2010 (10<sup>th</sup>): July 25-28, 2010: Sao Paulo, Brazil), 2010, p. 37-41.
- KORDESTANI, A., RAKHEJA, S., MARCOTTE, P., PAZOOKI, A., JURAS, D., *Analysis of ride vibration environment of soil compactors*. In SAE 2010: Commercial Vehicle Engineering Congress (October 5-6, 2010: Rosemont, IL), 2010, paper 2010-01-2022.
- KOUAM, J., MASOUNAVE, J., SONGMENE, V., GIRAUDEAU, A., *Pre-holes effect on cutting forces and particle emission during dry drilling*. In Annual Conference of Metallurgists / COM 2010 (49<sup>e</sup>): October 3-6, 2010: Vancouver, Canada), 2010, p. 253-263.
- KOUAM, J., SONGMENE, V., DJEBARA, A., KHETTABI, R., *Metallic particle emission during friction testing of metals*. In Proceedings of the International Conference on Nanotechnology: Fundamentals and Applications (August 4-6, 2010: Ottawa, Canada), 2010, paper 466, p. 1-8.
- KUTSCHKE, I., BALK, M., MCKINLEY, P., CÔTÉ, J.N., *Effects of Alexander technique training on neck-shoulder posture and movement (Poster)*. In European Federation of National Associations of Orthopaedics and Traumatology Congress / EFORT (11<sup>th</sup>): June 2-5, 2010: Madrid, Spain), 2010.
- LABERGE, M., CAROLY, S., STOCK, S., *Gender, work activity and MSD: what are the implications for intervention?* In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>): August 29 - September 3, 2010: Angers, France), 2010.
- LABRÈCHE, F., OSTIGUY, G., CASE, B., CHALAOUI, J., SIEMIATYCKI, J., CAMUS, J., *Mesothelioma surveillance: validation of diagnoses from a cancer registry*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- LABRÈCHE, F., GOLDBERG, M., VALOIS, M.-F., NADON, L., *Occupational exposures and postmenopausal breast cancer: impact of a sensitivity analysis*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- LAGACÉ, P.Y., OHL, X., BILLUART, F., SKALLI, W., TÊTREAU, P., DE GUISE, J., HAGEMEISTER, N., *Repeatability of shoulder bony landmarks location from biplanar x-ray in a pseudo-kinematic context (Poster)*. In SICOT/SIROT Annual International Conference (7<sup>th</sup>): August 31 - September 3, 2010: Gothenburg, Sweden), 2010.
- LAGACÉ, P.Y., BILLUART, F., OHL, X., SKALLI, W., TÊTREAU, P., DE GUISE, J., HAGEMEISTER, N., *Biplanar x-ray for the study of gleno-humeral translations: preliminary results in healthy and rotator cuff-deficient subjects*. In International Shoulder Group Meeting / ISG (6<sup>th</sup>): July 25-27, 2010: Minneapolis, USA), 2010, p. 22-23.
- LARA, J., COSSEMENT, D., BELLASFAR, I., JANVIER, F., DROLET, D., *Respiratory cartridge service life: the use of a modified version of the Wood's approach*. In International Conference of the International Society for Respiratory Protection / ISRP (15<sup>th</sup>): September 26-30, 2010: Hong Kong, Japan), 2010.
- LARIVIÈRE, C., DA SILVA, R.A., ARSENAULT, B., NADEAU, S., PLAMONDON, A., *Back muscles specificity of roman chair endurance exercises*. In Congress of the International Society of Electrophysiology & Kinesiology / ISEK (18<sup>th</sup>): June 16-19, 2010: Aalborg, Denmark), 2010.
- LARIVIÈRE, C., BUTLER, H., SULLIVAN, M.J.L., FUNG, J., VADEBONCOEUR, R., *Effect of pain attention/distraction and pain-related psychological variables on neuromuscular responses during rapid arm flexion movements*. In Congress of the International Society of Electrophysiology & Kinesiology / ISEK (18<sup>th</sup>): June 16-19, 2010: Aalborg, Denmark), 2010.
- LAVOIE, J., MARCHAND, G., CLOUTIER, Y., BEAUDET, Y., LAVOÛÉ, J., *Validation of the cleaning initiation criteria of heating, ventilation and air conditioning (HVAC) systems under real conditions*. In Health, Work and Social Responsibility: IOHA International Scientific Conference (8<sup>th</sup>): September 28 - October 2, 2010: Roma, Italy), 2010.
- LAVOIE, J., BAHLOUL, A., CLOUTIER, Y., *Cleaning initiation criteria for heating, ventilation and air conditioning (HVAC) systems in non industrial buildings*. In Raising Efficiency to New Levels: ASHRAE Annual Conference (June 26-30, 2010: Albuquerque, USA), 2010.
- LAZURE, L., GAGNÉ, C., DENIS, D., *Enhancing stakeholders involvement in knowledge translation activities in the OHS research environment*. In Proceedings of the International Conference on Intellectual Capital, Knowledge Management & Organisational Learning (7<sup>th</sup>): November 11-12, 2010: Hong Kong, China), 2010, p. 82-84.
- LEDOUX, É., LABERGE, L., THUILIER, C., PRUD'HOMME, P., GAUDREAU, M., VEILLETTÉ, S., PERRON, M., *Portrait des conditions d'emploi et de SST de jeunes étudiants de 17-18 ans*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- LEDOUX, É., CLOUTIER, E., OUELLET, F., THUILIER, C., GAGNON, I., ROSS, J., *Artistic practice and OHS: how do performing artists handle precarious employment?*. In The Changing World of Work: International Conference on psychosocial Factors at Work / ICOH-WOPS (4<sup>th</sup>): June 14-17, 2010: Amsterdam, The Netherlands), 2010.
- LEDOUX, É., GODIN, J.-F., LAPLANTE, B., VULTUR, M., TSALA DIMBUENCE, Z., *Précarité des trajectoires d'emploi et premières lésions professionnelles chez les jeunes de 16 à 24 ans*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.
- LEMIEUX, P., DURAND, M.-J., *Supervisors' perception of the factors influencing the return to work of workers with mental health disorders*. In Conférence internationale sur la prévention d'incapacité et l'intégration au travail / WDPI 2010 (1<sup>re</sup>): 2-3 septembre, 2010: Angers, France), 2010.
- LEROUX, J., ARGUIN, M., ACTEAU, G., BOISSONNEAU, G., *Epigenetic contribution to the genetic instability of haploid male germ cells*. In Innovations in Gender, Sex, and Health Research Conference (November 21-22, 2010: Toronto, Canada), 2010.
- LEROUX, J., ARGUIN, M., ACTEAU, G., BOISSONNEAU, G., *Epigenetic contribution to the genetic instability of haploid male germ cells*. In Symposium du Réseau québécois en reproduction / RQR (3<sup>e</sup>): 16-17 novembre, 2010: Québec, Canada), 2010.
- LEROUX, T., VYSKOČIL, A., TRUCHON, G., GENDRON, M., LEMAY, F., LIM, S., GAGNON, F., VIAU, C., *The weight of evidence approach in the case of ototoxic chemicals*. In Annual Hearing Conservation Conference: Explore the World of Hearing Loss Prevention / NHCA 2010 (35<sup>th</sup>): February 27-27, 2010: Orlando, USA), 2010.
- LUSSIER, B., DELISLE, A., BERRIGAN, F., PLAMONDON, A., et al., *Individual determinants of stability during lifting*. In Annual Meeting of the American Society of Biomechanics / ASB (34<sup>th</sup>): August 18-21, 2010: Providence, USA), 2010, p. 448-449.
- MAGHNI, K., CASTELLANOS, L., L'ARCHEVÊQUE, J., GHEZZO, H., MALO, J.-L., LEMIERE, C., *Utilisation du test d'activation des basophiles pour l'identification précoce de la sensibilisation allergique chez les travailleurs exposés à des agents pouvant causer l'asthme professionnel*. In Exposition aux contaminants de l'environnement: Les rencontres scientifiques de l'Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (6 décembre, 2010: Paris, France), 2010.
- MANDAPURAM, S., RAKHEJA, S., BOILEAU, P.-É., MARCOTTE, P., *Analysis of seated body biodynamic responses to multi-axis vibration*. In International Congress on Sound and Vibration / ICSV (17<sup>th</sup>): July 18-22, 2010: Cairo, Egypt), 2010.
- MANDAPURAM, S., RAKHEJA, S., BOILEAU, P.-É., MAEDA, S., *Apparent mass responses of seated occupants under single and dual (XZ) axis vibration*. In International Design Engineering Technical Conferences & Computers and Information in Engineering Conference / ASME 2010 (August 15-18, 2010: Montreal, Canada), 2010, (<http://www.asmeconferences.org/IDETC2010/PaperAccepted.cfm?noToolbar=yes>).
- MANDAPURAM, S., RAKHEJA, S., BOILEAU, P.-É., *Analysis of coupling effects in seated body biodynamic responses to multi-axis vibration*. In American Conference on Human Vibration (3<sup>rd</sup>): June 1-4, 2010: Iowa, USA), 2010.

MARCHAND, G., CLOUTIER, Y., PÉPIN, C., *A miniaturized bioaerosols exposition chamber serving the development of methods*. In International Congress on Aerobiology / ICA (9<sup>th</sup>: August 23-27, 2010: Buenos Aires, Argentina), 2010.

MARCOTTE, P., QUELLETTE, S., BOUTIN, J., LEBLANC, G., *Design of a low cost wireless acquisition system for human vibration measurement in harsh environments*. In American Conference on Human Vibration (3<sup>rd</sup>: June 1-4, 2010: Iowa, USA), 2010.

MARTIN, J.-S., HÉBERT, M., LEDOUX, É., LABERGE, L., *The relationship between chronotype, sleep, chronic fatigue and natural light exposure in young student workers*. In Meeting of the American Society for Photobiology (35<sup>th</sup>: June 12-16, 2010: Providence, USA), 2010, p. 45.

NASTASIA, I., TOULOUSE, G., ST-VINCENT, M., *Integration of ergonomics in a continuous improvement approach: goals and involvement of the main stakeholders*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France).

NASTASIA, I., IMBEAU, D., TOULOUSE, G., ST-VINCENT, M., AUBRY, K., CHIASSON, M.-E., *Prise en compte de la santé et la sécurité de travailleurs dans le processus de collecte et d'analyse des TCQP*. In La santé des travailleurs dans un milieu de travail changeant: Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.

NASTASIA, I., TCACIUC, R., COUTU, M.-F., *Modalities of intervention for preventing prolonged disability in compensated workers for WRMSDs*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

NOËL, A., L'ESPÉRANCE, G., CLOUTIER, Y., PLAMONDON, P., BOUCHER, J., PHILIPPE, S., DION, C., TARDIF, R., TRUCHON, G., ZAYED, J., *Comparison of different devices typically used for nanoparticles sampling (Poster)*. In Nanotoxicology Conference (3<sup>rd</sup>: June 2-4, 2010: Edinburgh, United Kingdom), 2010.

OSTIGUY, C., BOULOS, J.-M., BROCHU, L., CRÊTE, J.P., DIGNARD, N., HERAUD, D., HUDON, F., JUREWICZ, J.W., *Can induction plasma technology be nano-safe, "green" and energy efficient?* In NanoSafe 2010 (November 16-18, 2010: Grenoble, France), 2010.

OUELLET, S., LEDOUX, É., CLOUTIER, E., FOURNIER, P.-S., *Les défis d'une intégration compétente et sécuritaire des nouveaux travailleurs: le cas des travailleurs miniers*. In Unis par une vision commune: Congrès de l'Association canadienne d'ergonomie / ACE (41<sup>e</sup>: 4-7 octobre, 2010: Kelowna, Canada), 2010.

PAZOOKI, A., CAO, D., RAKHEJA, S., BOILEAU, P.-É., *Experimental and analytical evaluations of a torsio elastic suspension for off road vehicles*. In SAE 2010 World Congress & Exhibition (April 13-15, 2010: Detroit, USA), 2010, paper n°2010-01-0643.

PEIGNIER, I., LEROUX, M.-H., DE MARCELLIS-WARIN, N., TRÉPANIER, M., *Understanding the logistics of hazardous materials carriers*. In Transportation and the New Economy - Strategy, Synergy and Solutions: Translog 2010 - Conference in Transportation and Logistics (June 15-16, 2010: Hamilton, Canada), 2010.

PLAMONDON, A., DELISLE, A., DENIS, D., LARIVIÈRE, C., ST-VINCENT, M., SALAZAR, E., GAGNON, D., NASTASIA, I., *Manual materials handling: expert handlers use different lifting strategies than novices*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010, p. 233.

PRAIRIE, J., CORBEIL, P., *Paramedics on the job: a biomechanical and physiological workplace analysis*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

RENAULT, A., JAOUEN, L., SGARD, F., ATALLA, N., *Caractérisation de paramètres élastiques de matériaux poreux acoustique à partir de poutre en flexion*. In Congrès français d'acoustique (10<sup>e</sup>: 12-16 avril: Lyon, France), 2010, (<http://cfa.sfa.asso.fr/cd1/data/articles/000044.pdf>).

RENAULT, A., JAOUEN, L., SGARD, F., ATALLA, N., *Direct quasistatic measurement of acoustical porous material poisson ratio*. In Congrès français d'acoustique (10<sup>e</sup>: 12-16 avril: Lyon, France), 2010.

RODRIGUEZ, S., ZHANG, C., MOTAMED, A., HAMDAD, A., *Location tracking of construction resources using UWB for better productivity and safety*. In Proceedings of the International Conference on computing in Civil and building Engineering and The XVII European Group for Intelligent Computing in Engineering / ICCBE 2010-EG-ICE10 (June 30 - July 2, 2010: Nottingham, UK) Tizani, W. (ed), Nottingham University Press, 2010.

SGARD, F., AMICHI, K., BOUTIN, J., NÉLISSE, H., GAUDREAU, M.-A., *Prediction of the vibroacoustic response of earmuffs using a coupled finite element/BEM approach*. In International Congress on Sound and Vibration / ICSV (17<sup>th</sup>: July 18-22, 2010: Cairo, Egypt), 2010, 8 p.

STOCK, S., HA, C., *The surveillance of work-related musculoskeletal disorders (WMSD): how? and for whom?* In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

STOCK, S., *Work-related musculoskeletal disorders (WMSD) surveillance and Quebec's public health strategy to prevent WMSD: achievements and challenges*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

ST-VINCENT, M., IMBEAU, D., DENIS, D., GONELLA, M., COLE, D., *Follow-up of MSD prevention interventions initiated by work inspectors: process and impacts*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

ST-VINCENT, M., VÉZINA, N., LABERGE, M., GONELLA, M., COLE, D., *Analyse de la littérature francophone sur les interventions ergonomiques de type participatives initiées pour la prévention des TMS*. In La santé des travailleurs dans un milieu de travail changeant : Congrès de l'Association canadienne de recherche en santé au travail, ACRST/CARWH (28-29 mai, 2010: Toronto, Canada), 2010.

ST-VINCENT, M., IMBEAU, D., DENIS, D., GONELLA, M., COLE, D., *Follow-up of MSD prevention interventions in companies*. In International Conference on Prevention of Work-Related Musculoskeletal Disorders / PREMUS (7<sup>th</sup>: August 29 - September 3, 2010: Angers, France), 2010.

TARDIF, R., TRUCHON, G., BÉRUBÉ, A., SARI-MINODIER, I., CHAREST-TARDIF, G., *Modelling the impact of workload intensity on the biological exposure indicators of solvents*. In International Congress of Toxicology / IUTOX (12<sup>th</sup>: July 19-23, 2010: Barcelona, Spain), 2010.

THUILIER, C., LEDOUX, É., LABERGE, L., BESCOU, S., *L'expérience de travail des jeunes étudiants du Québec. Une particularité Nord-Américaine*. In Fiabilité, adaptation et résilience: Congrès de la Société d'Ergonomie de Langue Française / SELF (45<sup>e</sup>: 13-15 septembre, 2010: Liège, France), 2010.

TOULOUSE, G., DUHALDE, D., COMTOIS, A.S., DELISLE, A., ST-ARNAULD, L., *Approche ergonomique des facteurs psychosociaux dans les centres d'urgence 911 de la sécurité publique municipale*. In Unis par une vision commune: Congrès de l'Association canadienne d'ergonomie / ACE (41<sup>e</sup>: 4-7 octobre, 2010: Kelowna, Canada), 2010.

VAN DIEËN, J., LARIVIÈRE, C., GAGNON, D., KINGMA, I., CHOLEWICKI, J., *Towards emg-driven models of muscle-joint systems for clinical applications*. In Congress of the International Society of Electrophysiology & Kinesiology / ISEK (18<sup>th</sup>: June 16-19, 2010: Aalborg, Denmark), 2010.

VYSKOCIL, A., LEMAY, F., LEROUX, T., GAGNON, F., GENDRON, M., BOUDJERIDA, A., TRUCHON, G., LIM, S., VIAU, C., *Ototoxic effects of industrial chemicals alone or in combination with noise*. In Health, Work and Social Responsibility: IOHA 2010 International Scientific Conference (8<sup>th</sup>: September 28 - October 2, 2010: Roma, Italy), 2010.

ZHANG, C., ALBAHASSI, H., HAMDAD, A., *Improving construction safety through real-time motion planning of cranes*. In Proceedings of the International Conference on computing in Civil and building Engineering and The XVII European Group for Intelligent Computing in Engineering / ICCBE 2010-EG-ICE10 (June 30 - July 2, 2010: Nottingham, UK) Tizani, W. (ed), Nottingham University Press, 2010, paper 53, p. 105.

## MASTER'S THESES AND DOCTORAL DISSERTATIONS

ALBAHASSI, H., *Real-time motion planning and simulation of cranes in construction* Thèse de doctorat, Montréal, Université Concordia, 2010.

DEBIA, M., *Évaluation d'indices de comparaison pour la substitution des solvants en milieu de travail*. Thèse de doctorat, Montréal, Faculté des études supérieures et postdoctorales, Université de Montréal, 2010.

KUTSCHKE, I., *The effects of the Alexander technique training on neck and shoulder biomechanics and posture in healthy people*. Mémoire de maîtrise, Montréal, McGill University, Department of kinesiology and physical education, 2010, 79 p.

LIONEL, M., *Étude et caractérisation des phénomènes d'éclatement et d'explosion des pneus de camion*. Mémoire de maîtrise, Montréal, Ecole Polytechnique de Montréal, 2010.

MOSTOFI DARBANI, R., *Development of a procedure to measure the effectiveness of electrostatic N-95 respirator filter media for capturing nano-particles*. Thèse de doctorat, Montréal, Université Concordia, 2010, 91 p.

NOHILÉ, C., *Étude de l'influence du gonflement par les solvants sur les propriétés du caoutchouc butyle*. Thèse de doctorat, Montréal, Ecole de technologie supérieure, 2010.

PRAIRIE, J., *L'influence de l'intensité physique lors des interventions préhospitalières sur les postures du dos: une étude auprès des paramédics*. Mémoire de maîtrise, Québec, Faculté des études supérieures, Université Laval, Département de médecine sociale et préventive, 2010, 79 p.

TCACIUC, R., *Étude sur l'appréciation des facteurs de risque dans la reconnaissance du syndrome du canal carpien relié au travail*. Mémoire de maîtrise en biologie, Montréal, Université du Québec à Montréal, 2010, 101 p.

VOIROL, C.G., *Développement, mise en oeuvre et caractérisation d'un processus de surveillance continue par internet de facteurs psychosociaux en vue de son utilisation éventuelle dans la prévention des crises organisationnelles*. Thèse de doctorat, Montréal, Département des sciences biologiques, Université du Québec à Montréal, 2010, 172 p.

ZHANG, C., *Improving crane safety by agent-based dynamic motion planning using UWB real-time location system*. Thèse de doctorat, Montréal, Université Concordia, 2010.

## BOOK CHAPTERS

MALO, J.-L., DE GUIRE, L., LABRÈCHE, F., LABRECQUE, M., GAUTRIN, D., *Asthme professionnel avec et sans période de latence*. In Pathologie professionnelle et de l'environnement, Paris, Elsevier Masson, 2010, n°16-535-G-20, 17 p., (Collection EMC Pathologie).

MORENCY, F., HALLÉ, S., *Nanoparticles transport and diffusion in an animal exposure chamber*. In Advanced in Fluid Mechanics VIII, Rahman, M., Brebbia, C.A. (éd.), Southampton, England, WIT Press, 2010, p. 533-544.

OSTIGUY, C., ROBERGE, B., MÉNARD, L., ENDO, C.A., *Safe work with nanoparticles through an occupational risk management approach and a prevention program*. In Nanotechnology and Applications, NANA 2008, Nicolini, C. (ed.), Acta Press, 2010, papier 615-034.

# MISSION

To contribute, through research, to the prevention of industrial accidents and occupational diseases, and to the rehabilitation of affected workers.

To disseminate knowledge and serve as a scientific reference centre and expert.

To provide the laboratory services and expertise required to support the public occupational health and safety prevention network.

# VISION

**Through its leadership in occupational health and safety research, the IRSST seeks:**

- To consolidate its role as a reference centre vital to the operations and strategies of the CSST and its network;
- To be used by all its partners in a spirit of joint collaboration;
- To win recognition at the national and international levels;
- To derive maximum benefit from a well-established network of research and development collaborators.

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# JANUARY

Some 20 individuals gathered at the IRSST to form an interest group on respiratory protection, with the threefold mandate of identifying research needs in this area within the health sector, proposing guidelines to address the needs voiced, and prioritizing these needs.

The Institute welcomed **1 Philippe Charpentier**, head of the Sûreté des systèmes automatisés laboratory at France's INRS. Over a ten-day period, scientists from the two research centres looked into the possibilities of more joint projects on machine safety.

# FEBRUARY

The IRSST's president and CEO met with the director general of the INRS, **2 Stéphane Pimbert**, to finalize the details of a collaboration agreement in the area of machine safety and promote the development of research projects, mainly concerning lockout.



# MARCH

Interested in the Québec occupational health and safety system, a North African delegation under the auspices of the International Labour Organization visited the IRSST to gather ideas that will fuel a process of reflection and benchmarking with regard to modernizing the OHS systems in Algeria, Tunisia, and Morocco.

The researcher in charge of the Noise and Vibration field, **3 Franck Sgard**, became an associate editor of the scholarly journal *Journal of the Acoustical Society of America*.

The article entitled “The effect of workload on biological monitoring of occupational exposure to toluene and n-hexane: contribution of physiologically based toxicokinetic modeling,” published in the *Journal of Occupational and Environmental Hygiene*, was named Article of the Year by the Society of Toxicology. Written by **Irène Sari-Minodier** (Aix-Marseille Université), **4 Ginette Truchon** (IRSST), **Ginette Charest-Tardif** (Université de Montréal), **Annie Bérubé** (Université de Montréal) and **Robert Tardif** (Université de Montréal), this article was the result of a research project funded by the IRSST and France’s Agence nationale de sécurité sanitaire de l’environnement (AFSSET).



## APRIL

The IRSST asserted its presence by hosting information stands that featured the results of its research work at both the Salon de la réadaptation in Montreal and the Forum santé et sécurité du travail in Québec City.

## MAY

Concerned by the wave of suicides that has occurred in workplaces in France, a delegation from the Commission des affaires sociales of France's National Assembly visited the IRSST to discuss the psychosocial risks associated with work and how to prevent them. The Institute was his first stop on a tour of Québec partners working in the field of occupational health and safety.

The leader of the IRSST's Rehabilitation research field, **5 Bertrand Arsenault**, was given the honorary title of professor emeritus of the School of Rehabilitation in the Université de Montréal's Faculty of Medicine.

The Rehabilitation research team organized a symposium on the theme *Building a return-to-work research network in Canada* at the Canadian Association for Research on Work and Health (CARWH) Conference, held in Toronto.

The IRSST took part in the annual meeting of the Sheffield Group, which brought together the heads of the world's leading OHS research centres in Warsaw, Poland. Montréal will be hosting the 2012 meeting.



## JUNE

For the second year in a row, IRSST president and CEO **6 Marie Larue** participated in the International Economic Forum of the Americas, which took place in Montreal. She appeared as a guest speaker at a round table on the theme *Integration and Corporate Social Responsibility*.

## JULY

The IRSST welcomed the director general of the Finnish Institute of Occupational Health (FIOH), **7 Harri Vainio**, to discuss best practices, know-how, and issues faced in OHS research.

## AUGUST

According to BioMedLib, the article *Exposure to aerosolized bacteria and fungi among collectors of commercial, mixed residential, recyclable and compostable waste* topped the list of the most cited articles in its field. It was published in 2006 in the journal *Science of the Total Environment*, and was authored by **Jacques Lavoie** (IRSST), **Christopher Dunkerley** (McGill University), **Tom Kozatsky** (Montréal Public Health Program), and **André Dufresne** (McGill University).



## SEPTEMBER

The IRSST announced the composition of the external evaluation committee that will assess the performance and relevance of the activities carried out by the Institute from 2006 to 2010. Chaired by **Gilles Dussault**, head of the Health Systems Unit of the Institute of Hygiene and Tropical Medicine at the Universidade Nova de Lisboa in Portugal, the committee members are **Paul Demers**, director of Ontario's Occupational Cancer Research Centre (OCRC), **Michel Dumoulin**, vice-president, Scientific Affairs and Partnerships, at the Fonds québécois de recherche sur la nature et les technologies (FQRNT), **Jacques Frémont**, a full professor in the Faculty of Law at the Université de Montréal, and **Harri Vainio**, director general of the Finnish Institute of Occupational Health.

One of the IRSST's laboratory technicians, **Suzanne Paradis**, won the Méritas award for her role as a mentor in the Environment, Pure and Applied Sciences category. For the past eight years, she has been a mentor for the the Student Business Career Exploration Program of MR3 Montréal Relève.

## OCTOBER

The Ne<sup>3</sup>LS research network investigating the ethical, environmental, economic, legal, and social aspects of nanotechnology development launched a first call for proposals that will be funded by numerous partners. As one of these partners, the IRSST will be able to support projects that have an OHS component.

The Chemical Substances and Biological Agents research field team organized a scientific event on strategies for evaluating worker exposure to chemical substances. The American Board of Industrial Hygienists (ABIH) recognized it as a training course due to its high scientific calibre.

# NOVEMBER

A researcher at the Centre for Interdisciplinary Research in Rehabilitation and Social Integration (CIRRIIS), [9 Manon Truchon](#), was awarded the IRSST Prize for the best scientific article published in the last five years in the field of occupational health and safety, which comes with \$10,000. Published in the journal *Pain* in 2008, the article chosen was entitled “Low-back-pain related disability: An integration of psychological risk factors into the stress process model.” The other authors were **Denis Côté** (CIRRIIS), **Lise Fillion** (Université Laval), **Bertrand Arsenault** (IRSST), and **Clermont Dionne** (Université Laval).

A review of IRSST research on manual load handling was presented at the *Manutention: La charge, on la partage* (load handling: a shared task) colloquium in Saint-Hyacinthe, which was fully booked well in advance. It drew more than **150** people from different workplaces.

The IRSST awarded its Prix Innovation SST to a Québec-based biotechnology company, **Medicago**, at the 2010 gala of the Association de la recherche industrielle du Québec (ADRIQ). It was presented by the IRSST’s CEO, Marie Larue, to [10 Louis-Philippe Vézina](#), Chief Scientific Officer at Medicago. Given this year for the first time, the award pays official tribute to a company or organization that innovates in the area of occupational injury and disease prevention. Medicago developed an innovative process that differs from traditional methods in that it does not require the use of live viruses in vaccine production.



# DECEMBER

ASTM International adopted a new standard (ASTM F 2878-10) on glove resistance to hypodermic needle puncture. This standard was based on work done by the IRSST, a pioneer in this field. The leader of the Protective Equipment research field, researcher **[Jaime Lara](#)**, along with his collaborators at the IRSST and Montréal's École de technologie supérieure (ÉTS), carried out several projects on glove resistance to perforation, a topic of concern mainly for workers who face the risk of punctures by contaminated needles in their jobs.

