



USEFUL RESEARCH

Activities Report 2001

Institut de recherche
Robert-Sauvé
en santé et en sécurité
du travail



MISSION > To contribute, through research, to the prevention of industrial accidents and occupational diseases, and the rehabilitation of workers they affect.

> To offer the laboratory services and expertise needed for the activities of the public occupational health and safety prevention network.

> To play a role of scientific benchmark in the field of occupational health and safety.

VISION Through its leadership in occupational health and safety research, the IRSST plans to:

> Become a reference centre that is vital for the operations and strategies of the [CSST](#) and its network.

> Be used by its social partners in a collaborative context.

> Be recognized nationally and internationally.

> Have a firmly established network of research and development collaborators.

TABLE OF CONTENTS

REPORT FROM THE CHIEF EXECUTIVE OFFICER P3

A DYNAMIC VISION P3

TRANSFER TO WORKPLACES P4

TRANSFER TO SCIENTIFIC COMMUNITIES P6

ACCREDITATIONS, AWARDS AND DISTINCTIONS P7

OBJECTIVES FOR 2002 P8

HIGHLIGHTS OF 2001 P9

OVERVIEW OF THE IRSST P10

ORGANIZATIONAL CHART P10

RESEARCH PRIORITY P10

BOARD OF DIRECTORS AND SCIENTIFIC ADVISORY BOARD P11

FUNDING P11

LIST OF PUBLICATIONS P12



Jean Yves Savoie, Chief Executive Officer

REPORT FROM THE CHIEF EXECUTIVE OFFICER In 2001, research was clearly the focal point of the IRSST's activities, as evidenced by the 176 research projects it carried out during the year, involving some 300 scientists. Worker and employer representatives sitting on the IRSST's boards recognized all these projects as being relevant and of priority.

However, at the IRSST, we believe that the success of our work depends not only on the relevance and scientific quality of our research, but also on how workplaces use our results. By electing to align our research with our partners' concerns, we hoped to maximize the application of our research results being used more extensively.

This proved once again to be a winning strategy, as this 2001 activities report shows.

A DYNAMIC VISION The appropriation of its research results by workplaces has always been one of the IRSST's priorities, as has its willingness to regularly share its expertise and knowledge with its partners. Moreover, four years ago, the IRSST adopted an institutional vision which clearly expressed the desire to be used by its social partners as one of its objectives.

Over the years, our methods of applying research results have changed dramatically. We can now draw on the wealth of knowledge that we have accumulated, the cutting-edge expertise that we have developed and the solid network of collaborators that we have established, to optimize the use and transfer of our results.

More than ever, this transfer strategy is backed by appropriate management practices and concrete actions. In particular, a committee examines all projects that were completed during the year, in order to explore transfer avenues and facilitate the use of our knowledge.

KNOWLEDGE TRANSFER STRATEGY TO ENSURE THAT THE RESULTS OF SCIENTIFIC RESEARCH BENEFIT WORKPLACES, THE IRSST JOINS FORCES WITH POTENTIAL INTERMEDIARIES FROM THE START OF THE RESEARCH PROCESS, ENCOURAGES THEIR INPUT AS THE WORK PROGRESSES, AND SEEKS THEIR COMMITMENT TO DISSEMINATE THE RESULTING KNOWLEDGE. THIS COLLABORATION HAS HELPED THE IRSST DEVELOP SOLID EXPERTISE IN THE AREA OF KNOWLEDGE TRANSFER.

IN 2001, OVER 85% OF 176 ACTIVE PROJECTS INVOLVED THE DIRECT PARTICIPATION OF OHS PARTNERS OR WORKPLACE REPRESENTATIVES.

The IRSST has compiled and analyzed a list of 6,000 respiratory protection devices. All the information contained in this guide can be found on a site developed in collaboration with the CSST. It constitutes an essential tool to help stakeholders make the proper choices regarding protective equipment.



TRANSFER TO WORKPLACES One of the highlights of 2001 was undoubtedly the strong impact of actions aimed at facilitating the appropriation of research results by occupational health and safety stakeholders. The wealth of results generated from research projects allowed the IRSST to implement its knowledge transfer strategy.

Transfer

CHOOSING GOOD INTERMEDIARIES Two IRSST research projects brought to light certain problems related to the inadequate maintenance of propane-powered internal combustion vehicles, a major cause of worker exposure to [carbon monoxide](#). Backed by a network of partners who helped disseminate information in workplaces, the IRSST was able to convey the results of its work to over 6,000 stakeholders and workers as part of an awareness campaign. However, it became clear that to optimize the appropriation of knowledge by workplaces, transfer efforts had to extend even further, all the way to the classroom. Thus, to meet the need for the training of mechanics, the IRSST teamed up with three partners essential for the implementation of a development program: the Commission de la santé et de la sécurité du travail, the Ministère de l'Éducation, and the Commission scolaire de la Seigneurie des Milles-Îles. Together, they not only designed a special [training program](#) and learning guide for mechanics, but also assumed responsibility for training the instructors. The result: in 2001, nine school boards were able to offer this new training program, which continues to this day.

TRANSFERRING EXPERTISE Over the years, the IRSST has acquired recognized expertise in evaluating the risks associated with the use of **hazardous machines**, as well as in the different protection devices available. In 2001, the IRSST's scientists made a point of transferring this expertise to the main intermediaries, notably CSST inspectors, who intervene regularly among plant personnel. The cooperation of two sector-based associations, one in the transportation equipment and machine manufacturing sector (ASTFEM) and the other in the textile sector ([Préventex](#)), proved essential in transforming and adapting scientific knowledge into workplace training tools. In all, over 500 individuals benefited from one or more of the transfer activities: training sessions, workshops, regional seminars, etc.

TRANSFORMING KNOWLEDGE Specialized expertise is no longer required to establish a worker's **musculoskeletal health**. The IRSST has published a new tool for those wishing to undertake this task: *The [ABCs of using a questionnaire on musculoskeletal health: from planning to publication of results](#)*. Based on the knowledge and expertise developed by the IRSST and researchers from the Université du Québec à Montréal, this document allows the user to evaluate the extent of the problem, identify the parts of the body and groups of people most affected, and thereby obtain an overall profile. A detailed guide accompanies the reader through each step. Evaluating the situation using this tool constitutes the first step which, depending on the results, will have to be followed up by further analyses in order to identify the actions that may be required.



In response to a request from a joint committee of the CSST's board of directors, a team from the IRSST compiled a list of more than 6,000 **respiratory protection** devices. To facilitate consultation, the CSST and the IRSST pooled their efforts to incorporate all the information into a guide as well as a Web site. The site, www.prot.resp.csst.qc.ca, constitutes an essential tool for health and safety stakeholders, since it simplifies decision-making regarding the respiratory protection of workers.

SUPPORTING ITS PARTNERS To meet a request from a joint committee involved in the revision of Appendix 1 of the Regulation Respecting Occupational Health and Safety (RROHS), the IRSST and researchers from the Université de Montréal developed a guide for the adjustment of permissible exposure limits (PELs) for **chemical substances** for **unusual work schedules**. This guide offers users a structured approach, a calculation method and application examples. To support users in applying this procedure, researchers also designed a computer tool to simplify the calculation of the adjusted mean exposure limits (AMEL). This tool is available in French and English on the IRSST's Web site.

In effect in Québec since August 2001, the new RROHS specifies that exposure limits must now be adjusted for unusual work schedules, following the guide published by the IRSST. The CSST has trained over 300 industrial hygiene specialists responsible for making these adjustments.

COMBINING SKILLS Exposure to **beryllium** is a growing problem in Québec that is of major concern to the CSST, the health network, and employer and employee associations. The occupational health and safety network has pooled its skills in an effort to reduce this exposure and thereby prevent the outbreak of berylliosis among workers. As part of this CSST initiative, the IRSST's laboratories developed an analytical method to detect the presence of beryllium in air and dust. They thus offer an environmental analysis service, in addition to providing a link with the laboratories in charge of medical tests. The IRSST also joined forces with the private firm *Biophage* and McGill University's *Meakins-Christie* laboratory to set up Québec's first reference laboratory for beryllium sensitization tests.

MAKING USE OF EXPERTISE Given the expertise that they have developed, often in very specialized fields, researchers are asked to sit on **standardization committees**. This gives them an opportunity to forge ties with high-level scientists, learn quickly about promising avenues and the latest developments, and promote research conducted at the IRSST: in short, it allows for the advancement of knowledge. In the area of vibration, for example, the work of an IRSST researcher attracted the attention of the International Organization for Standardization (ISO), which called upon the latter to collaborate on the development of a new standard. After three years of work, exchanges, consultations and writing, the ISO 5982 standard, which describes the biodynamic response functions applicable to seated individuals subjected to vertical vibration, received final approval in October, following a unanimous vote by the 17 participating countries.



Transfer

TRANSFER TO SCIENTIFIC COMMUNITIES It is essential for researchers to present their ideas, theories and research results to members of the scientific community. This allows them to have their work validated and recognized, while enhancing the IRSST's national and international profile. To this end, the IRSST participated actively in organizing two international scientific meetings, organized various events for researchers and encouraged its personnel to present its results at conventions, conferences and seminars.

- > Brought together for the first time, on the IRSST's initiative, the members of the Société d'ergonomie de langue française ([SELF](#)) and the Association of Canadian Ergonomists ([ACE](#)) held their annual convention in Montreal in October on *Ergonomics for Changing Work*. For the 500 participating ergonomists, both researchers and practitioners, this represented a unique opportunity for sharing, networking and mutual enrichment.
- > Instigator and organizer of the first [International Conference on the Safety of Automated Industrial Systems](#), which took place in Montreal in 1999, the IRSST participated in the organization of the second edition, which brought together over 250 delegates in Bonn, Germany, in November.
- > Last April, some 200 scientists and occupational health and safety stakeholders were invited to a seminar presented by the IRSST on *Changes in the Workplace and in OHS Research Paradigms*. This event was an opportunity for participants to reflect on the challenges ahead and on the reconciliation of workplace and research requirements.
- > This year, the IRSST not only pursued its activities designed to maintain and expand its pool of researchers, but also encouraged scientists, in both Québec and Canada, to get together to share their knowledge and promote occupational health and safety research. The IRSST's leadership position allowed it to encourage the creation of the [Canadian health research association](#) and, in cooperation with three Québec research funds, the establishment of the *Réseau québécois de recherche en santé et en sécurité du travail* (Québec network of occupational health and safety research).



Popular vote

At a public forum on knowledge transfer held in Toronto, the IRSST captured two of the three awards offered for the best posters presenting the strategies used to facilitate the transfer of research results.

ACCREDITATIONS, AWARDS AND DISTINCTIONS Once again this year, various scientific organizations recognized the quality of the work carried out by the IRSST's researchers and the efficiency of the services offered by its laboratory personnel. For our partners, this recognition attests to the quality of our work and allows them to use our results with complete confidence.

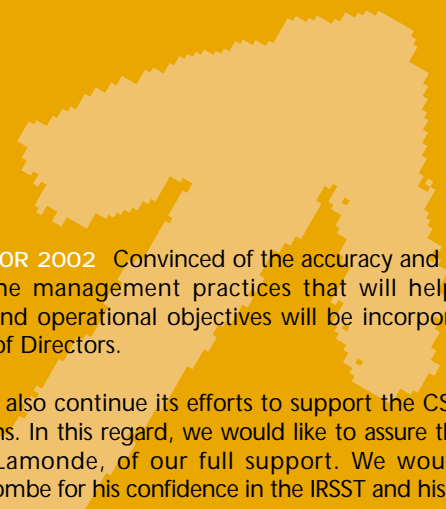
> The IRSST's microbiology laboratory received an [accreditation](#) from the *American Industrial Hygiene Association (AIHA)* for bacteria and mould analyses. It is the only laboratory in Canada, and one of the first in North America, to receive such recognition. This accreditation confirms not only the quality of its methods and processes, but also the leadership of its team members.

> *The Standards Council of Canada (SCC)* awarded a [new accreditation](#) certificate to the IRSST's laboratories, thereby confirming their competence in the calibration of acoustic measurement instruments. For our clients, obtaining this certificate or a new accreditation attests to the quality of the IRSST's services. It provides assurance that the instruments are calibrated so that they provide accurate and reliable results, and can be used independently by the IRSST's partners.

> Serge Massé, an engineer at the IRSST, earned first prize from The [Canadian Society for Mechanical Engineering](#) for his scientific article on anti-kickback protection for edgers and resaws used in sawmills and softwood lumber industry.

> Dr. Jules Brodeur, seasoned researcher and long-time associate of the IRSST, received the Antoine-Aumont award from the *Association québécoise pour l'hygiène, la santé et la sécurité du travail (AQHSST)*, recognizing his contribution to research in industrial hygiene. Dr. Brodeur also sits on the IRSST's Scientific Advisory Board.

> At the very end of the year, the quality of the IRSST's know-how in the area of knowledge transfer was recognized at a public forum organized by the *Association of Workers' Compensation Boards of Canada (AWCBC)* in Toronto. As a result of a popular vote by 500 participants, the IRSST captured two of the three awards offered for the best posters presenting the strategies and methods used to facilitate the transfer of knowledge stemming from research work.



OBJECTIVES FOR 2002 Convinced of the accuracy and relevance of its institutional vision, the IRSST will pursue the management practices that will help it realize this vision in 2002. Strategic orientations and operational objectives will be incorporated into the annual research plan ratified by the Board of Directors.

The IRSST will also continue its efforts to support the CSST in the development of its strategies and in its operations. In this regard, we would like to assure the new President of the IRSST and the CSST, Mr. Jacques Lamonde, of our full support. We would also like to thank outgoing president Mr. Trefflé Lacombe for his confidence in the IRSST and his support of research throughout his mandate.

Since questions from the members of its health and safety network are becoming more and more numerous, diversified and complex, the IRSST will step up its efforts to develop and expand its network of researchers. A promising avenue in this regard is the partnership formula, which the IRSST plans to promote whenever it would lead to the development of new knowledge in occupational health and safety.

One mission, one vision and, as always, one goal: to ensure that workers and employers benefit from the results of our research.

Jean Yves Savoie, Chief Executive Officer



THE YEAR 2001 IN NUMBERS

RESEARCH

176 projects were active in 2001*

> **74** started

> **34** completed

> **68** continuing

36% of active projects stemmed from a collaborative effort between internal and external researchers.

38 projects were under development.

35 committees of the CSST and its network, including regulatory committees, included at least one IRSST representative.

24 national and international standards committees invited the IRSST to sit in an expert capacity.

30 scholarships were granted for a total amount of **\$442,200**.*

LABORATORY SERVICES

60,545 environmental, toxicological and microbiological analyses, **83%** of which were performed for our partners in the prevention-inspection network: the CSST, regional health and social services boards, CLSCs and joint sector-based associations.

5,071 hours were devoted to calibration, maintenance and repair of direct-reading and calibration instruments, **94%** of which were for those used by the prevention-inspection network.

DISSEMINATION

29 research reports and guides published by the IRSST.

59 articles published in peer-reviewed research journals or conference proceedings by IRSST personnel.

172 presentations given by IRSST personnel at scientific conventions or at events organized by partners.

35 courses given by IRSST personnel during training sessions organized by our network partners, universities and research collaborators.

18 non-technical articles published in *Prevention au travail*, the magazine published by the CSST and the IRSST.

7,891 publications distributed in response to requests.

159,347 visits to the IRSST's Web site, representing an average of **436** visitors per day, more than double the number recorded last year.

18,486 downloads of research reports from the IRSST's Web site.

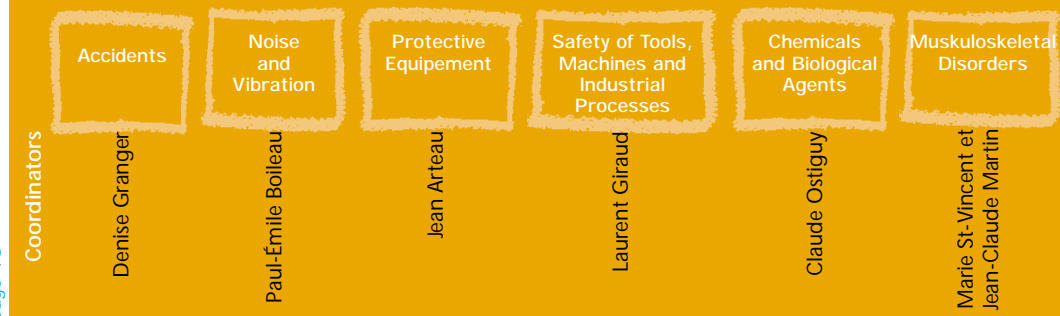
* The summaries of all projects carried out or sponsored by the IRSST, as well as the complete list of scholarship recipients, are available on the IRSST's Web site: www.irsst.qc.ca.

OVERVIEW OF THE IRSST The IRSST team comprises 137 people, including a scientific staff of 90 employees, comprising researchers, professionals and technicians from various disciplines, such as ergonomics, industrial hygiene, chemistry, physics, engineering, sociology, anthropology and demographics. The IRSST's external network includes some 130 researchers from universities, research centres and private firms.

ORGANIZATIONAL CHART (AS OF DECEMBER 31, 2001)



RESEARCH PRIORITIES Most of the Institute's scientific and technical activities are concentrated in six research fields.



BOARDS

THE BOARD OF DIRECTORS determines the IRSST's orientation, development framework and funding.

CHAIRMAN

Jacques Lamonde
Chairman of the Board and
Chief Executive Officer
Commission de la santé et de
la sécurité du travail

WORKER

REPRESENTATIVES

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Andrée Bouchard
Pierre Dupuis
Claude Faucher
Jean Lavallée
Marc Laviolette
Henri Massé

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REPRESENTATIVES

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Franco Fava
Gaston Lafleur
Sylvain Lebel
François-E. Pelletier
Jean-Paul Robin
Gilles Taillon

OBSERVERS

Horacio Arruda
Anne Parent
François Turenne

IRSST MANAGEMENT

Jean Yves Savoie

THE SCIENTIFIC ADVISORY BOARD provides counsel to the Chief Executive Officer. Its mandate is to express an opinion on the relevance, importance and scientific quality of internal and external research projects and programs.

CHAIRMAN

Jean Yves Savoie

EMPLOYER

REPRESENTATIVES

Richard Lapointe
Roger M. Laporte
Renée Liboiron
Alain Neveu

WORKER

REPRESENTATIVES

Daniel Flynn
Robert Guimond
Claude Rioux
Serge Trudel

MEMBERS OF THE SCIENTIFIC AND TECHNICAL COMMUNITIES

Charles E. Beaulieu
Jean-Marc Brodeur
Jules Brodeur
Maurice Brossard
Maryse Lassonde
R. Charles Terreault

OBSERVERS

Alain Albert
Alain Lajoie

FUNDING



REVENUES \$20,041,896

- CSST grant 82.7%
- Laboratory services 11.2%
- External contracts 5.4%
- Other revenues 0.7%



EXPENSES \$20,041,925

- Internal research 41.8%
- External research 21.2%
- Finance and administration 11.6%
- Laboratory services 11.4%
- External contracts 5.4%
- Communications 4.1%
- Customer service and technical support 2.5%
- Management 2%

LIST OF PUBLICATIONS

IRSSST PUBLICATIONS

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BÉLANGER, R., S. MASSÉ, R. BOURBONNIÈRE, C. SIRARD and R. DAIGLE. *Évaluation d'une entrave mobile visant à améliorer la protection des opérateurs de presses à friction*, Montréal, IRSSST, 2001, 60 p. (Études et recherches, Research report, R-264).

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IRSST 505 De Maisonneuve Blvd. West, Montréal, Québec H3A 3C2

Telephone: (514) 288-1551 Fax: (514) 288-7636

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