

Presidential Address: The Formation of ISSLS And Its Impact on Lumbar Spine Research

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Mr. Chairman, distinguished guests, members of ISSLS, ladies and gentlemen, as this is our 30th Annual Scientific Meeting; I thought it an ideal occasion to celebrate the contributions of our Founders and Charter Members in establishing the International Society for the Study of the Lumbar Spine (ISSLS). In this address, I intend to give an account of the forces leading to the formation of ISSLS in 1974 and to assess the impact of this on lumbar spine research.

As the first meeting I attended was not until 1981, I have relied on others for information on the formative years. However, when putting events into perspective, it may well have been an advantage to look back without too much ownership of the past. I wish to acknowledge Bernie Finneson's 1984 Presidential Address, which contained an account of the formation of ISSLS. I am most grateful to Walt Simmons for the use of his recorded interviews with key Charter Members and also to Lee Wiltse, Michael Sullivan, and Ron Beetham who shed new light by providing me with important documents and details of their involvement. Finally, I wish to thank the many other Charter Members and their wives who responded to my requests for information.

From the information collated, it became clear that the catalyst for the formation of ISSLS was the coming together at meetings of surgeons from different parts of the world in the late 1960s and early 1970s. Whereas North American surgeons established the Scoliosis Research Society (founded in 1966 as the Scoliosis Club) and the Cervical Spine Research Society (founded in 1973), the formation of ISSLS was both international and multidisciplinary from the very beginning. In fact, the roots of our Society can be traced to several individuals attending key meetings in Hong Kong, Australia, the United Kingdom, and North America.

In 1968, following the second Western Pacific Orthopedic Association Meeting, in Hong Kong, John O'Brien organized a spinal symposium attended by approximately 50 registrants. The International Faculty included Lee Wiltse, who later became the first President of ISSLS, and Ed Simmons. During the preceding week in Hong Kong, Ron Beetham and Arthur Yau had assisted Allan

Dwyer, from Sydney, with a demonstration of his novel technique of screw and cable fixation for the anterior correction of thoracolumbar scoliosis. These are the preoperative and postoperative radiographs of that patient (Figure 1). During the symposium, on the sixth postoperative day, this patient walked unassisted in front of the assembled audience.

This created an extraordinary impression, as it was not unusual at that time for a patient to be kept in bed for several months following scoliosis surgery. Dwyer had received very little encouragement from his Sydney colleagues. However, he gained considerable support from Arthur Hodgson, then Professor of Orthopaedics in Hong Kong and an undisputed pioneer of anterior spinal surgery.

Perhaps Hodgson was thinking of Dwyer's predicament when he wrote an editorial for the 1968 *Journal of the Western Pacific Orthopedic Association*.¹ In the editorial, which preceded the papers presented at the Hong Kong Spinal Symposium, Hodgson stated "Anterior spinal surgery is a subject of controversy. Most of the resistance to this approach to the spine comes from the individual who has not used it, or who knows little about it and who rejects it either because he is too old or too lazy to learn about it."

At the conclusion of the Hong Kong Meeting (Figure 2), there was discussion about having a further spinal symposium in conjunction with the Combined Meeting of the Orthopedic Associations of the English Speaking World, due to be held in Sydney in 1970.

The 1970 Spinal Symposium was held in Ballarat, Australia chaired by Ron Beetham. Harry Farfan from Montreal, who later became the Founding Chairman of ISSLS, was one of the 35 registrants. The program included a prominent international surgical faculty. From the United States, there were L.L. Wiltse and P.H. Harmon. Canada was represented by E.H. Simmons and W.H. Fahrni, South Africa by G.F. Dommissie and T.B. Enslin, Japan by N. Nakano, Hong Kong by J.P. O'Brien, and Australia by A.F. Dwyer and H.V. Crock. The attending Australians decided to form a society named the Facet Club, which first met in 1971 with Dwyer as the founding Chairman, changing its name to the Spine Society of Australia in 1989. According to Beetham (personal communication), at the Ballarat gathering, there was discussion about the formation of an international society concerned with the lumbar spine, and he claims this was the point of conception of ISSLS. Certainly, the fact that a disproportionate number of Charter Members were Australian (10 out of a total of

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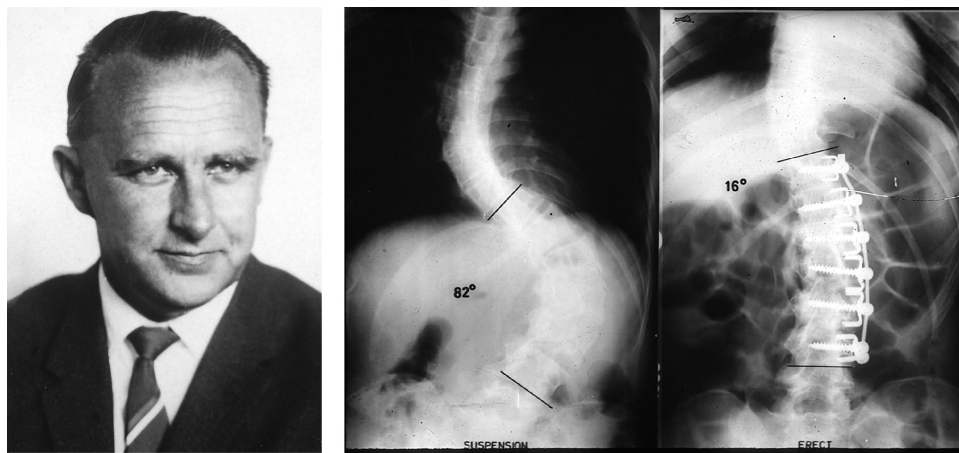


Figure 1. **A:** Alan Dwyer. **B:** The preoperative and postoperative radiographs of Dwyer's demonstration case at the 1968 WPOA Meeting in Hong Kong.

70) is a measure of the influence of the Ballarat meeting on the subsequent formation of ISSLS.

At the end of the Ballarat meeting, it was decided to hold a further international spinal meeting in 1972. Ed Simmons suggested the meeting be held on the Island of Cos, the birthplace of Hippocrates, and Beetham was empowered to make the necessary arrangements. In addition to those present at Ballarat, Beetham invited other prominent international surgeons with an interest in the lumbar spine. More than 20 people were booked to attend the meeting in June 1972, but at the 11th hour, the arrangements were canceled because of the May 30th massacre by terrorists at Tel Aviv's Lod Airport, which left 25 dead and 72 wounded.

The last occasion I spoke with Harry Farfan was at the 1993 Marseilles Meeting. I asked him for his version of how ISSLS began. Farfan disagreed with Beetham's view that the concept of ISSLS had originated in Ballarat. Farfan said that when Beetham let the arrangements for a further meeting lapse, he and Allan Dwyer from Sydney, formed a "committee of two" with the aim of establishing an international lumbar spine society (Figure 3). Dwyer had first met Farfan at the 1970 Combined meeting in Sydney, where, according to Aurelie Farfan (per-

sonal communication), Farfan presented his first major paper on his research. Dwyer, who was immediately impressed by what he heard, arranged to visit Farfan in Montreal.

Both Dwyer and Farfan were Catholic, with large families (16 offspring between them), were heavy smokers, and enjoyed their drink. With so much in common, it was not surprising that they developed a close friendship. According to Farfan, the "committee of two" decided that Dwyer (a few years the senior) should be the Chairman and Farfan would be the Secretary. They met twice in 1972 at Farfan's home in Montreal. Farfan recalled that during the first of these meetings he said to Dwyer, "there must be at least 15 people in the world who would be prepared to come together to discuss the lumbar spine." At the subsequent meeting, they drew up a list of potential members and the following year invitations were issued to a small group (about 15 people) to meet near Farfan's home in Montreal.

In May and June of 1972, Michael Sullivan (personal communication) visited several centers in North America, on a traveling fellowship from the Royal National Orthopedic Hospital in London, where he was about to commence work as a Consultant. His first port of call



Figure 2. Ronald Beetham (second from left), Arthur Hodgson (center), and Lee Wiltse (right) at the WPOA Meeting, Hong Kong 1968.



Figure 3. The “Committee of Two”: Harry Farfan (left) and Allan Dwyer in Farfan’s laboratory at St Mary’s Hospital, Montreal, 1972.

was Montreal, to visit Farfan, followed by Toronto where he spent time with Ian Macnab. Next he visited Lee Wiltse, followed by Henry LaRocca, William Fielding, and Richard Rothman. At this time, Sullivan was unaware Farfan was contemplating the formation of a lumbar spine society. However, during his stay in Toronto, Macnab told him he thought it time a low back society was formed. LaRocca had just completed a fellowship with Macnab who suggested that LaRocca and Sullivan should get together to organize a low back society and a spine journal. Macnab offered to head the society along with Phillip Newman from London and Lee Wiltse (Figure 4), the same triumvirate who came together in 1976 to publish their seminal paper on the classification of spondylolisthesis.²

In October 1972, LaRocca attended a London meeting on Low Back Pain, at the Royal National Orthopedic Hospital, Stanmore. The concept of establishing an international lumbar spine society was further discussed with Newman and Sullivan (Sullivan M, personal communication). Preliminary plans were drawn up, including a list of potential contributors and the creation of letterhead entitled the Low Back Society. Sullivan was given the task of developing the Low Back Society, LaRocca the task of establishing a spine journal, which

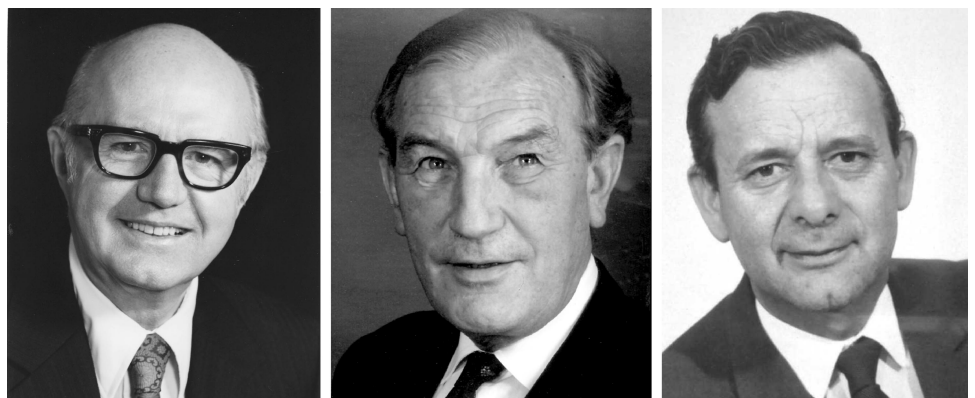
culminated in LaRocca’s appointment as Editor in Chief of *Spine*, when it was first published in 1976.

During the 1960s and 1970s, the American Academy of Orthopedic Surgeons ran a number of continuing medical education programs on the spine. The faculty usually included speakers from different disciplines, including anatomists, biomedical engineers, and physicians (from various specialties). One such meeting, chaired by Richard Rothman, was held at the Marriott Hotel in Philadelphia in November 1973 (Finneson B. Presidential Address, International Society for the Study of the Lumbar Spine, Montreal, 1984). At the conclusion of this meeting, a conversation took place between Mark Brown, LaRocca, Alf Nachemson, Rothman, and Wiltse, all of whom wished to be involved in the establishment of a low back society. At the same time, Farfan was in the process of arranging a small meeting of 15 people in Montreal. Wiltse, invited to participate, advised Farfan to enlarge his meeting by including Sullivan’s Low Back Society group. Similarly, Macnab, on hearing of the Farfan meeting, contacted Sullivan suggesting an amalgamation of both groups

Carried by the enthusiasm for a low back society, in January 1974, a meeting was arranged by Wiltse during the annual meeting of the American Academy of Orthopedic Surgeons in Dallas, TX. Chaired by Wiltse, an interim executive committee was formed consisting of Wiltse (Interim President), William Fielding (Interim Vice-President), and LaRocca (Interim Secretary). To encourage and support international representation, regional chairmen were appointed: Richard Rothman (eastern United States), Jorge Gallante (central United States), Homer Pheasant (western United States), Marvin Tile (Canada), Alf Nachemson (Europe), Michael Sullivan (Great Britain and Africa), and Harry Crock (Western Pacific). It was decided that the first meeting would be held in Montreal with Farfan as chairman. Because of increasing interest in the new society, Farfan made a reservation at the Holiday Inn at Longueuil, for an estimated 70 participants, well short of the 135 that finally attended.

Over the next few months, Harry Farfan and Lee Wiltse communicated regularly to organize the Montreal

Figure 4. The “low back triumvirate” of the 1970s: Lee Wiltse (left), Phillip Newman (center), and Ian Macnab (right).



meeting. A variety of possible names for the society were considered, before settling on Farfan's preferred title, namely, the "International Society for the Study of the Lumbar Spine." The proposed title was subsequently endorsed at the first Executive Meeting and later ratified by the membership, at the General Session. Three specific guidelines were embraced when formulating the type of society to be established. The first was that members should be involved in some research aspect of the lumbar spine, rather than being totally consumed with clinical work. Second, individuals from the basic sciences, engineering, and various medical specialties should be encouraged to participate in the society as active members with full rights; there would be no associate members or second class citizens. Third, it was considered important that members demonstrate an ongoing and continued special interest in the lumbar spine. These principles were subsequently included in the By-Laws, drawn up in 1974, under the chairmanship of Homer Pheasant, encapsulating the spirit of our society.

By all accounts, the inaugural meeting of 135 registrants, held June 19–22, 1974, was a great success. Certainly, the scientific program included papers from a number of world authorities on the lumbar spine. George Dommissie from South Africa presented his research on the circulation of the spinal cord, involving 7 years of painstaking study. It was Dommissie's devastating experience of paraplegia complicating instrumented correction of scoliosis, in a young girl, that was the stimulus for his seminal research. Phillip Newman from England discussed his work on degenerative spondylolisthesis and Henk Verbiest of the Netherlands, considered the father of spinal stenosis, presented his study of this subject. Alf Nachemson presented the results of his group's disc pressure studies and Lee Wiltse discussed the value of preoperative psychological screening.

There was one particularly sad note to this meeting. The program included an abstract from Alan Dwyer, who was unable to attend when his health deteriorated. He required an esophagectomy for advanced carcinoma, the procedure being carried out 1 month before the Montreal meeting. Dr. N. Newton, a long time friend of Dwyer and a surgeon of exceptional skill, performed the operation. In fact, Newton had taught Dwyer the thoracoabdominal approach he used for scoliosis correction.³ Dwyer's personal tragedy was heightened when his friend and colleague collapsed a few days after performing the surgery and died from cerebral metastatic disease 6 weeks later. This information was contained in a letter from Dwyer to Aurelie and Harry Farfan, dated July 9, 1974, in which he also stated "I have had news from several sources to tell me that the meeting was a great success, and I very much regretted missing it. I was looking forward to it so much actually that I did consider at one time ignoring my symptoms until after the trip. However, that probably would not have been a good idea."

Acknowledged by Farfan as the Co-Founder of ISSLS, Dwyer was a man of remarkable foresight and ingenuity. His screw and cable system, developed in 1963, was one of the first forms of segmental fixation of the spine,⁴ the other being pedicle screw fixation developed by Roy Camille in the same year.⁵ In 1972, Dwyer introduced direct current as an adjunct to anterior and posterior fusions of the spine. His paper on this topic was not presented at the Montreal meeting, but together with the majority of papers it was published in 1975 in *Orthopedic Clinics of North America*.⁶

Of the 35 papers presented, nine were concerned with spinal mechanics and six were on basic science. Less than one third of the papers were related to surgical treatment. The presenters came from eight countries: Australia, Canada, Great Britain, Holland, New Zealand, South Africa, Sweden, and the United States. An international and multidisciplinary society for the study of the lumbar spine had been well and truly launched!

Many years later, when reflecting on the importance of the formation of ISSLS to basic science, Farfan⁷ stated. "Until 1972, the number of centers working on basic research related to the lumbar spine numbered three in Great Britain, three in Canada, eight in the United States, one in Scandinavia, and three in Australia. With the formation of the International Society for the Study of the Lumbar Spine (ISSLS) in 1973, the interest in basic science was given a tremendous boost." Throughout his career, Farfan, with his own inimitable style, boosted interest in basic science and biomechanics. He was renowned for his use of simple line drawings and other visual aids to explain his concept of stability.

At the Inaugural Business Meeting of the Society, Wiltse was inducted as the President for 1974. Sullivan was appointed Secretary and the office for the Society for the next 4 years was the Royal National Orthopedic Hospital in London. During this period, Sullivan's Secretary acted as the administrative secretary for the Society. Homer Pheasant designed the Society logo symbolizing internationalism, and this formed part of the distinctive letterhead used since 1976. Sullivan singled out special praise for Henk Verbiest, President in 1976, for his wonderful efforts in promoting the fledgling ISSLS in Europe.

In 1978, Marvin Tile assumed the role of Secretary. The database of members was transferred to Sunnybrook Hospital in Toronto, which became the permanent Secretariat for the Society. Shirley Fitzgerald was appointed as the Administrative Secretary, a position she has held with distinction and dedication for the past 25 years.

Meeting sites alternated between North America and Europe until 1985 when the meeting was held in Sydney, Australia. The 30 annual scientific meetings have been held in 15 countries. The only site to be revisited was Montreal, 10 years after the inaugural meeting, and once again Farfan was the Organizing Chairman.

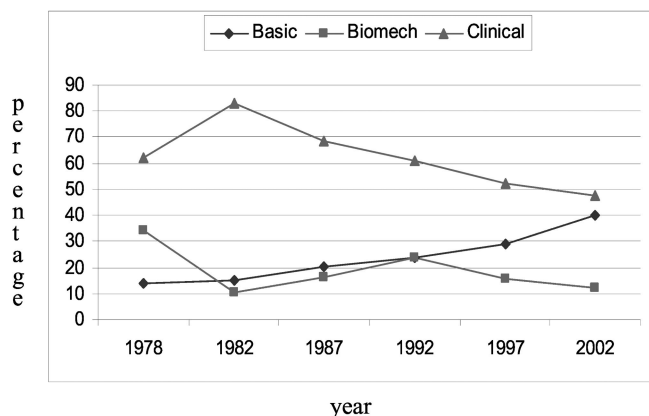


Figure 5. Changes in the numbers of basic science, biomechanics, and clinical papers presented at ISSLS annual meetings between the years 1978 and 2002.

Whereas the charter members came from 10 countries and four disciplines, today’s membership includes 31 countries and 16 disciplines. Our 29 Presidents have been selected from 10 countries (Australia, Canada, England, France, Germany, Italy, Japan, Netherlands, Sweden, and the United States) and have represented five disciplines, namely, orthopaedics, neurosurgery, engineering, rheumatology, and physiotherapy. Clearly, the international and multidisciplinary nature of the membership of ISSLS has broadened over the past three decades.

The importance of internationalism and collaboration to scientific advancement was the subject of Robert Mulholland’s outstanding Presidential Address at Heidelberg in 1991. Following this, Mulholland presented the Society with a medallion bearing the ISSLS logo, to be worn by the current President when representing the Society.

What was the quality and content of the scientific papers presented to the Society and has this changed over the years? Under my guidance, Dr. Eugene Wai from Toronto has conducted a systematic review of the research presented by the Society. The information from this analysis forms the basis of a poster presentation at this meeting. The review was carried out to assess trends in research in an effort to provide quantified documentation of the history of the Society as well as insights into future directions. Abstracts of all papers presented to the Society have been kept since 1978. A systematic review of these abstracts was performed.

Graphical plots in each category of research and aspects of study quality were used to identify any trends. The analysis revealed a linear trend toward increasing numbers of basic science papers and decreasing numbers of clinical papers (Figure 5). In 1978, 14% of papers were considered basic science compared with 62% as clinical studies. By 2002, the percentages were 40% and 48%, respectively.

The Society’s list of areas of interest was reduced from 16 to 12 main subjects, and abstracts were placed under one or more of these headings. We found that 43% of all papers (from 1978 to 2002) focused on the disc, repre-

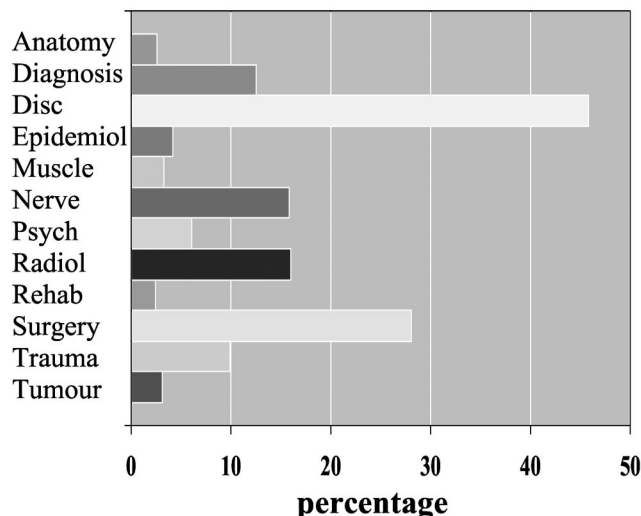


Figure 6. A percentage comparison of the topics for paper presentations given at ISSLS annual meetings from 1978 to 2002.

senting the single largest area of research (Figure 6). Furthermore the proportion of research on the disc has been increasing. Overall, 28% of papers were concerned with surgery, 16% with nerve, 16% with radiology, while 13% of papers centered on diagnosis and 10% on trauma. Although epidemiology was the subject of only 4% of abstracts, there has been a steady increase in epidemiological presentations over the years.

Based on information contained in the abstracts, the papers were classified under one or more of the following categories of study type: case control, descriptive, randomized controlled trial, risk factor, or treatment control. The most common category was descriptive, which applied to more than half of the clinical, basic science, and biomechanics papers (Figure 7). Twenty-seven percent of clinical papers were concerned with risk factors and 30% of basic science and biomechanics papers were classified as treatment control studies.

The overall quality of papers has improved in a linear fashion over the years. In 1978, more than 80% of papers were purely descriptive. By 2002, 42% of papers were descriptive, whereas 40% incorporated an experimental design. When comparing clinical papers with basic science or biomechanical papers, there was no significant difference in regards to the proportion of descriptive papers

Categories	Clinical (%)	Basic Science, Biomechanical (%)
Case Control	5.4	0.6
Descriptive	53.6	58.4
RCT	7.9	3.4
Risk Factors	27.3	7.3
Treatment Control	5.8	30.3

Figure 7. An assessment of the quality of papers presented at ISSLS annual meetings between 1978 and 2002, comparing clinical papers with basic science and biomechanics presentations.

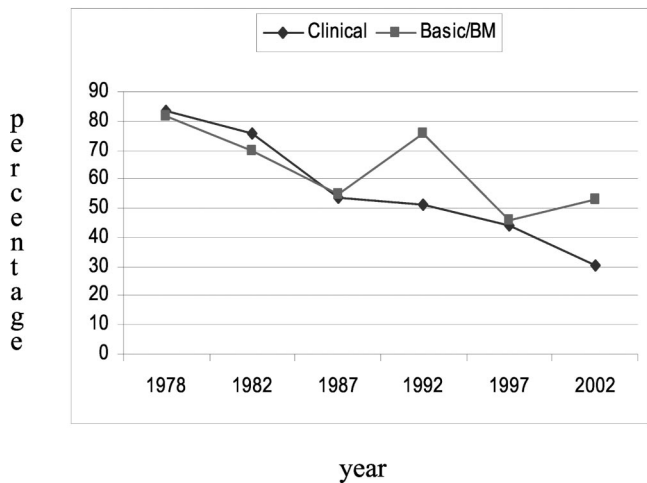


Figure 8. Changes in the numbers of descriptive papers presented at ISSLS annual meetings between 1978 and 2002, comparing clinical with basic science and biomechanics papers.

(Figure 8). However, over the past decade, there has been a linear increase in the proportion of randomized controlled trials among clinical papers, when compared with basic science or biomechanical papers (Figure 9). It is apparent from this assessment that the overall quality of research presented to the Society has steadily improved during the past 25 years.

The changing scene of spinal research is illustrated by the most popular topics discussed at meetings during this period. In 1978, these were “scar following laminectomy” and “biomechanical testing of bone”; in 1982, the “treatment of prolapsed disc” and “chemonucleolysis”; in 1987, “psychosocial factors in back pain”; in 1992, “biomechanics of the degenerative disc”; in 1997, “physiologic mechanisms of sciatica”; and in 2002, “bone morphogenic proteins.”

Fifty-four percent of all abstracts presented at 1998–2000 meetings went on to publication compared with 45% for the years 1991–1993 reported by Wang *et al.*⁸ The factors related to publication included basic science or bio-

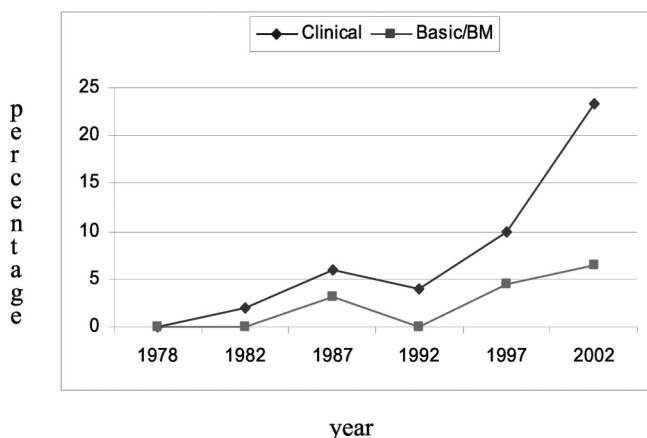


Figure 9. Changes in the numbers of randomized controlled trials presented at ISSLS annual meetings between 1978 and 2002, comparing clinical with basic science and biomechanics papers.

mechanical papers, use of blinded or independent observers, an experimental design, and a significant positive result.

In addition to the presentation of papers at Annual Scientific Meetings and the subsequent publication of research, the Society has promoted research on lumbar spine disorders and their management through two important initiatives. First, Jim Weinstein and Sam Wiesel served as Editors of *The Lumbar Spine*, a publication authored by members of the Society and first printed in 1990.⁹ The second edition in two volumes was published in 1996 with an expanded Editorial Committee.¹⁰ It contains contributions from 116 of the Society’s members, representing most of the membership countries and disciplines. Led by Harry Herkowitz, the Editorial Committee is in the process of finalizing the third edition of this much-acclaimed textbook.

The second educational initiative was the establishment of Instructional Courses, introduced by Gunnar Andersson during his term as President in 1989. The courses, often held in developing countries, have been most successful. A total of 15 courses by Members of the Society have been conducted in 12 countries, under the chairmanship of Gunnar Andersson and Jiri Dvorak.

Throughout the years, the Society has made available various fellowships and awards aimed at encouraging lumbar spine research, in both established institutions and developing countries. However, it was the Volvo Award, arguably the premier international spinal research award, which became synonymous with ISSLS. First established in 1979 as an initiative of Alf Nachemson, the presentation of the Volvo Awards has been one of the highlights of Annual Scientific Meetings for the past 24 years (Figure 10). Unquestionably, the Volvo



Figure 10. Alf Nachemson, Chairman of the Volvo Awards Committee 1979–2002.



Figure 11. Harry Farfan (right) with Jean Cauchoix from Paris at the ISSLS Annual Meeting, Toronto, 1982.

Award competition, run by a committee chaired by Nachemson, has been a major catalyst for lumbar spine research internationally, both within and outside of the Society. With the closure of the Volvo Award comes the birth of the ISSLS Prize, to be presented for the first time tomorrow, the name symbolizing the confidence, maturity, and international standing of the Society.

I now wish to turn my attention to the relationship between two icons of our Society. In 1977, while working as a clinical fellow in Toronto, I was encouraged by Ian Macnab to visit Harry Farfan in Montreal. During my stay, Farfan asked who had suggested I visit him and expressed surprise at my reply, stating I was the first person Macnab had sent. It was apparent that they did not always see eye to eye. Many years later, at the Marseilles Meeting, when I was discussing the formation of ISSLS with Farfan, he expressed the disappointment he had felt at Macnab not attending the inaugural meeting and resigning his membership 3 years later. It appeared that he had taken this as a personal affront. However, I think it most likely that Macnab's lack of involvement at this time was due to intense personal pressures, having been recently subjected to a devastating family tragedy.

His widely read book entitled *Backache*, which was first published in 1977,¹¹ was dedicated to Gillian, his beloved daughter who drowned in an accident in May 1973, the year preceding the inaugural meeting. It is apparent from Sullivan's account that Macnab was, in fact, extremely supportive of the formation of ISSLS. He had encouraged the intended Low Back Society group to join forces with Farfan's group. Moreover, he was instrumental in LaRocca's creation of the journal *Spine*.

This team of Macnab and LaRocca, which ceased to exist when both passed away in 1992, is remembered by the attachment of their names to the ISSLS Traveling Fellowship. Furthermore, Macnab's overall contribution to the lumbar spine was recognized in 1979 when he was made an Honorary Member of the Society, the only clinician or researcher, in the history of ISSLS to be awarded this distinction.

Following his death in 1994, Harry Farfan and his pivotal role as Founding Chairman are remembered warmly at each Annual Scientific Meeting with the linking of his name to the Presidential Guest Lecture. He is seen in this photo, doing what he enjoyed so much, having a conversation with one of his long time ISSLS friends, Jean Cauchoix from Paris, their conversation no doubt being conducted in French (Figure 11).

Ladies and Gentlemen, the International Society for the Study of the Lumbar Spine was established in 1974 by a group of clinicians, scientists, and engineers with a collective vision for the future: to encourage lumbar spine research through international and interdisciplinary collaboration. The Society's record of achievements during the first 30 years is testament to the fact that our Founders and Charter Members left a wonderful legacy of which all of us should be very grateful.

Finally, I wish to sincerely thank the Members of ISSLS for granting me the great privilege of serving as President for the past year. To follow in the footsteps of my predecessors was the highest possible accolade of my professional career, something of which I am unashamedly proud.

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