

WHEN VISION PREVAILS: A HISTORY OF THE INTERNATIONAL SOCIETY FOR STRATEGIC STUDIES IN RADIOLOGY

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Today, globalization is a well-recognized phenomenon that affects innumerable aspects of daily life, including medical care. The drugs, medical devices, and imaging technologies on which national medical systems depend are developed in far-flung parts of the globe. Although academic organizations, government agencies, and corporations from around the world both shape and are shaped by these developments, there are surprisingly few international forums for these stakeholders to meet, exchange ideas and set broad strategies for the future.

This article reflects on the formation and evolution of the International Society for Strategic Studies in Radiology (IS3R), a non-political, not-for-profit organization that brings together leaders from academia, government and industry to communicate, plan strategically and influence future developments in the field of medical imaging. Long before globalization became a household word, the visionary leaders behind the IS3R recognized that there were deep, common interests and concerns among medical imaging communities around the world. It is hoped that this history will illustrate the value of forums for multilateral, international discussions on healthcare and will inspire and provide a model for the development of more such forums.

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КОГДА ВОПРОСЫ ВИЗУАЛИЗАЦИИ ПРЕОБЛАДАЮТ: ИСТОРИЯ МЕЖДУНАРОДНОГО ОБЩЕСТВА СТРАТЕГИЧЕСКИХ ИССЛЕДОВАНИЙ В ЛУЧЕВОЙ ДИАГНОСТИКЕ

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Сегодня глобализация является хорошо известным явлением, затрагивающим бесчисленные аспекты повседневной жизни в том числе, медицинской службы. Препараты, медицинские приборы и технологии (визуализации или получения и обработки изображений), от которых зависят национальные медицинские системы, разработаны в отдаленных частях земного шара. Несмотря на то, что академические организации, государственные учреждения и корпорации по всему миру одновременно и формируют эти открытия и зависят от них, существует удивительно мало международных форумов для встречи ключевых сторон, обмена идеями и разработки стратегий на будущее.

Эта статья отражает формирование и эволюцию Международного общества стратегических исследований в лучевой диагностике (IS3R), неполитической, некоммерческой организации, которая объединяет лидеров научных сообществ, правительственных и промышленных организаций для коммуникации, стратегического планирования и влияния на будущие разработки в области медицинской визуализации. Задолго до того, как понятие глобализации стало обиходным, дальновидные лидеры (лидеры-новаторы) из IS3R признавали, что существуют общие глубокие вопросы и проблемы среди сообществ в сфере медицинской визуализации по всему миру. Существует надежда, что история сообщества наглядно проиллюстрирует значение таких форумов для многосторонних, международных дискуссий в сфере здравоохранения и будет вдохновлять и служить моделью для развития подобных форумов.

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Conception. The seeds of what is now known as the International Society for Strategic Studies in Radiology – or IS3R – were planted some 35 years ago at the first “International Conference on the Impact of New Radiological Technology on Health Care, Research and Teaching.” held in March of 1978 in San Francisco. Born of the vision of Dr. Alexander R. Margulis, then Chair of the Department of Radiology at the University of California (UCSF), the conference was organized by a small committee of academic radiologists under his leadership. Its purpose, as Dr. Margulis explained in his introductory remarks, was to “discuss the problems imposed on radiology, medicine in general, the medical schools, the leading hospitals and society as a whole, by the explosive advances in [radiological] technology.”

At the time, health care costs accounted for approximately 9% of gross national product in the United States and posed a significant burden in other developed countries as well. “CAT fever” had already spread worldwide, and technologies for ultrasound and nuclear medicine were rapidly increasing in sophistication, making radiology one of the largest areas of capital expenditures in health care. The hope of the meeting organizers was that sharing ideas and experiences internationally would help to develop practical approaches for deploying new imaging technologies before limits on their use were imposed from outside the imaging community.

To address this ambitious agenda, the committee gathered together not only academic radiologists, but also leaders from industry and government, deans, professors of medicine and surgery, basic scientists, and hospital directors. While the majority of the 75 active participants came from the United States, 32 hailed from other countries scattered around the globe: Australia, Canada, Denmark, England, France, Germany, Israel, Japan, Mexico, the Netherlands, Norway, Spain, Sweden and Yugoslavia.

In individual lectures and panel discussions, the participants shared ideas and different national approaches for addressing a wide array of concerns, including the financing of new technologies, the assessment of the cost-effectiveness of new technologies, control of the acquisition and use of new technologies within hospitals and healthcare systems, and the adjustment of training programs in light of new technologies. The exchanges were lively and enthusiastic, and as there was a general consensus that the meeting filled an important need addressed by no other forum, the UCSF Department of Radiology continued to present similar symposia every two to three years.

By the time of the fifth symposium, in 1992, the organizing committee was large and in-

ternational, and the meeting was attended by representatives from 22 companies from diverse parts of the world. The program now addressed concerns affecting emerging as well as developed countries, including outreach efforts to improve imaging and overall health care in the latter.

In the mid-1990s, the roughly biennial symposium was no longer hosted solely by UCSF. It became geographically free-floating and shifted somewhat in emphasis, returning to a greater focus on justifying the costs of imaging. To disseminate the ideas exchanged at the meetings, the proceedings were published in journals such as *Academic Radiology* and *European Radiology* (1-3), and executive summaries of the proceedings were sent to national radiological societies and relevant government agencies.

II. Birth of the IS3R.

The decision to form the non-profit International Society for Strategic Studies in Radiology was made at the 1999 meeting in Berlin, partly to deal with the growing organizational demands of the meeting and its related outreach efforts. Statutes were established and headquarters were designated in both the United States and Europe.

Since the very beginning, the society has had a diverse international membership – including representation from Europe, the US and Asia – as well as strong relationships with industrial partners, who actively participate in its meetings. Corporate memberships for industry partners were introduced in 2003.

The broad mission of the society is to define and investigate strategic, scientific and economic issues of global importance to the field of radiology. By forming a partnership between academia and industry, the society seeks to anticipate national and global developments in radiology and allied fields, define areas of common interest to both partners, and encourage cooperation. It aims to communicate important issues to radiologists, physicians in other medical fields, industry and governments, and to influence healthcare management and the flow of financial and human resources into the scientific and strategic fields most likely to advance biomedical imaging and patient care.

The goal of increasing cost-effectiveness while improving outcomes is implicit in the society’s mission and continues to lie at the heart of its wide-ranging discussions. The topics addressed have included everyday concerns faced by department chairs (e.g., specialty-related turf battles, methods for improving workflow, challenges in the clinical implementation of information technologies); financial and regulatory pressures affecting research; needed changes in the education of imaging specialists; and new frontiers in imaging technologies and their potential synergy with ad-

vances in other biomedical fields. Starting with the fifth biennial meeting, the IS3R began to publish the proceedings of its meeting; thus far, they have all appeared in either *Radiology* or *European Radiology* -- two of the most respected and widely read peer-reviewed imaging journals (4-7).

The society continues to evolve, expanding the international diversity of its membership and adapting the meeting programs to address pressing new subjects. Yet the hallmark of the society's operations and meetings remains open, multilateral peer discussion and consultation. This leads to better understanding of the needs of all the stakeholders, not least those of radiologists and their industrial partners. In turn, this understanding should lead to a better deal for patients and the community in the form of lower costs, greater access, faster throughput and improved diagnosis and therapy.

III. Impact and Conclusion.

Much has changed in the 35 years since the first meeting on the "Impact of New Radiological Technology on Health Care, Research and Teaching," yet the subject of that meeting is as timely as ever and will remain so as long as biomedical imaging continues to advance. While it is impossible to measure the precise impact of the IS3R and the preceding symposia on the development of biomedical imaging around the world, the fact that leaders from the highest levels of academia, industry and government agencies have found it worth their while to attend the symposia time and again over several decades is a strong indication of the society's value.

Through the IS3R, stakeholders who could easily see each other as competitors have developed friendships and a better understanding of how their needs can be aligned in the shared quest for high-quality, cost-effective healthcare. Industry leaders who have attended have commented that the meetings provide a unique atmosphere, in which, instead of delivering a "sales pitch," they feel free to engage in an open exchange of information. They have also expressed appreciation for the forward-looking perspectives of the society's members and have said that the meetings often help them with their strategic planning.

The IS3R meetings sharpened leaders' focus on many important emerging technologies, including digital imaging methods that substantially transformed the field, and functional and molecular imaging methods that have supported new directions in clinical practice and research that extend beyond the traditional borders of radiology. New and innovative ideas for improving the effec-

tiveness and efficiency of healthcare regained traction among the medical imaging community after being presented at the IS3R and likely influenced leaders' decisions regarding which technologies and research areas to invest in.

A look back at the sixth IS3R meeting in 2005 provides some evidence of the society's presence – and perhaps its ability to help set the course for change (4). Topics discussed at the 2005 meeting that were exciting and novel at the time included the need for structured reporting, which is now being widely implemented; cost savings and care improvements obtainable through inter-institutional image sharing, which is now being provided through commercially-run cloud-sharing systems; computerized order entry with decision support, which is now embedded in US Federal law and coming to Europe; the potential for "data mining," which is now being applied in the emerging discipline of radiomics; and the importance of defining and using shared lexicons (such as SNOMED and RADLEX) for precise communication—which is now conceptually part of precision medicine (4). The meeting also featured an extensive discussion of molecular medicine that presaged other precision medicine concepts, such as the use of imaging methods that target gene products to detect, localize and quantify gene activity – in essence, a form of functional genomics. While IS3R was certainly not the first place these topics were presented, it was likely the first place that many leaders in the radiology community and medical imaging industry heard about them in detail and had a chance to share their perspectives on them.

There is no doubt that at the IS3R meetings and prior biennial symposia, leaders reinforced each other's commitments to tackling difficult problems, such as standardizing evidence-based approaches to imaging, making large-scale changes in daily practice to incorporate advances in information technology, and improving radiation safety.

The advent of healthcare reform in the United States and other countries around the world has heightened the pressure to increase cost-effectiveness and develop better measures of outcomes. Thus, the question of how advances in medical technology can be incorporated into an economically viable healthcare system has become still more urgent and complex. The IS3R, which continues to expand year by year, is an important reminder that reaching across organizational boundaries and national borders can help us find creative and practical answers.

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