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A History of the AANS/CNS Section on Tumors Biennial Satellite Symposium

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Abstract

The Biennial Satellite Tumor Symposium is the flagship meeting of the AANS/CNS Section on Tumors. The year 2013 marked the 10th Tumor Section Biennial Satellite Tumor Symposium, a significant milestone warranting retrospection on the origin and development of the Satellite Tumor Symposium. This article provides a brief history of the Section on Tumors Biennial Satellite Tumor Symposium, including insights into the structure and evolution of the meeting, and recognizes some of the members of the AANS/CNS Section on Tumors who have contributed to Satellite meetings over the years.

April 26–27, 2013 marked the 10th meeting of the American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS) Section on Tumors Biennial Satellite Tumor Symposium, held in New Orleans, LA. This 10th meeting was a significant milestone, prompting us to review the history of the Biennial Satellite Symposium. This article outlines this history and recognizes some of the members of the AANS/CNS Section on Tumors who have contributed to the success of the meeting over the years.

The Founding of the Biennial Satellite Symposium Meeting

Although the Section on Tumors was founded in 1984, as a joint subspecialty section of the AANS and CNS [1], it was not until 10 years later in 1994 that the Section organized and hosted its first independent scientific meeting. This ten year gap between the Section's founding and its first independently administered scientific meeting was a result of the Section having agreed as a condition of its establishment that it would not organize a separate scientific meeting that might detract from the annual meetings of the AANS or CNS. According to Mark Rosenblum, MD, a founding member and the first Chair of the Section on Tumors (Chair from 1984–1991) (M. Rosenblum, personal communication), in the early 1990s the idea of hosting a scientific meeting was controversial and hotly debated for several years. However, a 1993 survey of the Tumor Section members showed support for a scientific meeting [1]. At the time there were no other meetings dedicated solely to

neurosurgical oncology; the Society for Neuro-Oncology, now one of the largest neuro-oncology organizations, would not be founded until 1995 and did not host its first meeting until 1996. Therefore, empowered by the membership's call for an educational meeting, but wanting to remain true to the spirit of the initial "non-compete" agreement with the AANS and CNS, the Tumor Section leaders decided to hold a scientific meeting in conjunction with the annual meeting of the AANS or CNS which would be promoted as a "satellite symposium" of the parent organizations' annual meetings and would be held every two years. This biennial "satellite" arrangement mitigated any impression that it was competing with the AANS or CNS, and Tumor Section leaders argued that their new Satellite Symposium would not only not detract from the larger annual meeting, but would actually bolster attendance. Since then, the meeting has been called by a variety of names, including the "Biennial Tumor Satellite Symposium," the "Biennial Brain Tumor Satellite Symposium," and the "Biennial Satellite Symposium." It has grown over the past 20 years and 10 meetings into its current status as the flagship event of the Section on Tumors (Table 1).

The First Satellite Meeting

The first Satellite Meeting was held in Chicago, IL on October 6–7, 1994, following the CNS Annual Meeting (Table 1). The Tumor Section Chair at the time was Peter Black, MD PhD (Chair from 1993–1995) and the Scientific Program Chair was Mitchel S. Berger, MD. The meeting was one-and-a-half days long, from Thursday afternoon to Friday evening; it was well attended with over 225 people [1]. The Satellite was organized around three themes: 1) Oncogenesis, 2) Invasion and Metastasis, and 3) New Therapeutic Approaches, topics that remain of interest today (Figure 1, Table 2). This meeting established the basic Satellite structure of including both oral presentations of peer-reviewed abstracts and didactic lectures by invited speakers from multiple disciplines. Lectures were delivered not only by neurosurgeons, but also by basic scientists (C. David James, PhD, Mark Israel, MD, Rolf Bjerkvig PhD and Webster Cavenee, PhD), medical oncologists (Victor Levin, MD, Mike Prados, MD, and Skip Grossman, MD), and radiation oncologists (Jay Loeffler, MD). This spirit of collaboration has been a cornerstone of the Section on Tumors and a hallmark of the Satellite Tumor Symposium throughout its history.

Highlights of Subsequent Meetings

There have been nine subsequent Satellite meetings. Several features of these meetings and their organizers give insight into the development and history of the Satellite Symposium (Tables 1 and 2; Figures 2–4).

Over the years the Satellite Symposium has been held almost exclusively in cities in the USA, except for the second meeting in 1996, when the meeting was held in Montreal, Quebec, Canada during the tenure of the fourth Tumor Section Chair, William Chandler (1995–97) (Figure 2). The meeting has been held twice in three cities: Chicago (1994, 2002), San Francisco (2000, 2004) and New Orleans (2009, 2013).

Five (50%) of the 10 Scientific Program Chairs of the Satellite Symposia have later become Chair of the Section on Tumors (Table 1). Raymond Sawaya, MD who chaired the 1996

meeting became Section Chair in 2003; James Rutka, MD chaired the 1998 Satellite and became Section Chair in 2001; Ronald Warnick, MD chaired the 2000 meeting and became Section Chair in 2005; and Frederick Lang, MD, who chaired the 2004 Satellite and co-chaired the 2009 meeting, became Section Chair in 2011. Finally, Andrew Parsa, MD PhD who chaired the 2007 meeting will become Section Chair in 2015. Two Scientific Program Chairs have later become President of the AANS: Dr Rutka was AANS President in 2010, and Dr Mitchel S. Berger, MD was President in 2012.

Over the years, the meeting has switched back and forth between the CNS and the AANS (Table 1). The first two meetings in 1994 and 1996 were “satellites” of the CNS Annual Meeting, and took place in October (Table 1). In 1998 during the Chairship of Mark Bernstein, MD the third meeting became a satellite of the AANS Annual Meeting and took place in April. This switch occurred because most Section members wanted to support the multi-disciplinary culture of the fledgling Society for Neuro-Oncology whose Annual meeting was scheduled in November. In order to avoid any conflict with SNO, Section leadership voted to move the Satellite meeting to April. This shift to the AANS was maintained for several Satellites including in 2000 when Joseph Piepmeyer, MD was Chair of the Section, and in 2002 when James Rutka, MD was Chair. Then in 2004, under the Chairship of Raymond Sawaya, MD the meeting shifted back to being a satellite of the CNS, in order to allow extra time for planning of a banquet celebrating the 20th Anniversary of the founding of the Section on Tumors. Although this meeting was a satellite of the CNS, the Section continued to work with AANS staff in administering the meeting, creating a bit of friction between the Section on Tumors and the CNS—which fortunately has faded over the years.

How is it that a *biennial* meeting which started in 1994, a year ending in an even number, has its 10th meeting in 2013, a year ending in an odd number? Indeed, until 2004, the first five Biennial Satellites were held in even years, as expected (Figure 2). However, during the Chairship of Ronald Warnick (2005–2007), the meeting shifted to an odd year, 2007 (Figure 2) due at least in part to the 2004 managerial controversy with the CNS: rather than hold the meeting in October 2006 as a satellite of the CNS (with AANS administration), the meeting returned to be a satellite of the AANS and was held in April 2007 with the AANS as meeting administrator. So the Satellite has been an “almost biennial meeting” as 2.5 years elapsed between the 6th Satellite Symposium and the 7th Satellite Symposium. Since 2007, the Satellite has been held in odd years.

Relationship with Society of Neuro-Oncology (SNO)

Given that SNO is a multidisciplinary organization of neuro-oncology specialists, many members of the Tumor Section have been active members of SNO since its founding and some have held leadership roles in both organizations. The relationship between the two organizations has always been cordial and collaborative. As mentioned, in 1998, the Tumor Section shifted its Satellite Meetings from October to April to avoid conflict with the fall annual SNO meeting.

In 2009, under the urging of Section Chair Michael McDermott, MD the first joint meeting between the Section on Tumors and SNO was held (Table 1). SNO did not hold an annual meeting in North America in 2009, due to a commitment to participate every four years in the World Federation of Neuro-Oncology (WFNO) Meeting, held that year in Japan. Consequently, Dr. McDermott and SNO Presidents Ab Guha and Susan Chang planned a joint meeting of SNO with the 2009 Section on Tumors Satellite Meeting (Figure 3, Table 1). This meeting was held October 22–24, 2009 preceding the CNS Annual Meeting in New Orleans, LA. Although Dr. McDermott had been a major advocate and driver of this joint meeting with SNO, by the time of the meeting in October, Dr. McDermott's tenure as Chair (April 2007– April 2009) had ended and Jeffrey N. Bruce, MD had assumed the Chair of the Section. Satellite scientific program chairs were drawn from both the Section on Tumors (represented by Randy Jensen) and SNO (represented by Frederick Lang). The meeting included an Education Day, a regular feature of the SNO annual meeting which was new for the Satellite Symposium (Tables 1 and 2). The meeting was attended by over 1000 people including members of both SNO and the Section on Tumors and was one of the most financially successful meetings for the Section.

The success of this joint meeting with SNO led to vigorous discussion within the Section on Tumors about the impact of the Satellite Symposium, which attracted primarily neurosurgeons, relative to the Annual Meeting of SNO, which attracted not only neurosurgeons, but also neuro-oncologists, medical oncologists, neuro-pathologists, radiation oncologists, basic scientists, neuro-radiologists, and neuropsychologists. By 2010, the SNO annual meeting had developed into the major meeting in the USA for neuro-oncology. As such, under the leadership of Chair Jeffrey Bruce, MD (2009–2011) the decision was reached to organize the Section on Tumors Satellite Symposium as a satellite of the Annual Meeting of SNO, rather than as a satellite of the AANS or CNS annual meeting. This change allowed Section members who were not members of SNO to participate in this larger meeting at a reduced cost and allowed Section members to showcase their research to a larger and more diverse audience than typically attended the Satellite Symposium. Dr. Bruce was a major advocate of this new collaboration and convinced the section to make the change. This was the first time the Section's Satellite Symposium was held separately from the AANS and CNS Annual Meetings (Table 1, Figure 3). The meeting took place on November 17–20, 2011 in Orange County, CA. By the time of the meeting, Dr Bruce had transitioned out of the Chair position and Frederick Lang, MD was the new Chair of the Section on Tumors (April 2011– April 2013), as well as the President of SNO (tenure Nov. 2009 – Nov. 2011). Likewise, Mike Vogelbaum, MD, PhD was Secretary-Treasurer of SNO (tenure Nov. 2009 – Nov. 2011) and also a member of the Section on Tumors and part of the Scientific Program Committee, coincidences that are a testament to the collaboration between the Section on Tumors and SNO and a prime reason for the success of the two organizations' joint meetings to date. At the 2011 meeting, Section members collaborated with SNO members to develop the Education Day program, and several surgically oriented "sunrise sessions" and "meet-the-expert" sessions were organized by the members of the Section on Tumors who comprised the joint Scientific Program Committee (Table 2).

Despite the success of the 2011 meeting, Section on Tumor leadership grew concerned that continuing as a satellite of the SNO meeting (rather than of the AANS or CNS) might eventually dilute the impact of the Satellite Symposium. It was felt that the large size of the SNO meeting could potentially overwhelm the relevance and role of the Section on Tumors. Consequently, during the Chairship of Frederick Lang, MD (2011–2013) the decision was made to again return the Satellite Symposium to be a satellite of either the AANS or CNS. Consequently, the 10th Satellite was organized as a satellite of the AANS and took place in New Orleans, LA April 26–27, 2013. Although this Satellite was no longer attached to the SNO Annual Meeting, SNO Vice President Mike Vogelbaum, MD (also a Tumor Section member) and SNO member Patrick Wen MD, asked the Section on Tumors to help organize a special “Joint Symposium on Meningiomas.” This suggestion, led to the first one-day “symposium within the Symposium” and was devoted specifically to the biology and management of meningiomas, attracting medical neuro-oncologists, radiation oncologists, neuro-radiologists and neuro-pathologists (Figure 3 and Tables 1–2).

Features of the Biennial Satellite Tumor Symposium

Despite the somewhat complex relationships between the Section on Tumors, the AANS, the CNS and SNO, and despite the addition of elements such as Education Days and “symposia within the Symposium,” many core elements of the Biennial Tumor Satellite Symposium have remained stable through the 10 meeting history. First, the goal of the meeting has always been to provide members of the Section on Tumors with an update on the most recent advances in the field of neurosurgical oncology. Consequently, the meeting has always included invited speakers who provide comprehensive coverage of the most up-to-date information on CNS tumors and have often been leaders in their field (Table 2). Second, the Satellite Symposium has always been a forum for exchange of the newest scientific information, and therefore, has always included oral and poster presentations of peer-reviewed abstracts submitted by the membership, i.e. it is “abstract driven.” Indeed, abstract submissions have increased with each meeting with over 200 submissions for the 2013 meeting. Third, the meeting recognizes scientific excellence. At each meeting, there is commonly an award given to the best abstract and there have been over the years awards specifically for abstracts submitted by residents in training. Lastly, the meeting has been a time to celebrate, and the Satellite Symposium has been used to commemorate milestones of the Section. In 2004, the 20th anniversary of the Section on Tumors was commemorated in a formal banquet, and in 2013 the 10th meeting of the Satellite Symposium itself was commemorated in a special celebration.

The Satellite Meeting has also become a venue for recognizing neurosurgeons who have been influential contributors to the Section, in particular, and the field of neurosurgical oncology, in general. In 2004 at the 20th Anniversary Celebration the Charles B. Wilson Award was established by Raymond Sawaya, MD to recognize the contributions of outstanding individuals to the field of neuro-oncology. This award honors Dr. Wilson, who was a true pioneer of neurosurgical oncology for nearly 30 years. To date, the Award has been presented to only four recipients: Mark L. Rosenblum (2004), Peter M. Black (2007), Raymond Sawaya (2011) and James Rutka (2013).

Conclusion

The Section on Tumors Biennial Satellite Symposium has had a complex history, despite only 10 meetings so far. It is likely that the future of the Satellite Tumor Symposium will be equally rich as the Section on Tumors is composed of dynamic and forward-thinking members, who are not afraid of change and innovation. In a brochure we wrote for the 10th Anniversary celebration of the Satellite Meeting (see section website archives), James Rutka, MD, 2013 Wilson Award winner, commented on the Satellite meeting with the following quote:

“The AANS/CNS Section on tumors has played a vital role in the field of experimental and clinical neuro-oncology since its inception in 1984. Since that time, the advances in neuro-oncology basic science research and translational therapeutics have been nothing short of meteoric. There will always be a role for the special educational offerings that the Tumor Section Biennial Satellite Tumor Symposium affords to neurosurgeons, medical neuro-oncologists, radiation oncologists, and basic scientists. The 10th Biennial Satellite Tumor Symposium is a cause for major celebration, as over the past 20 years, the Section on tumors has consistently delivered an inspirational scientific program which always provides presentations and special topic sessions on the cutting edge of technology and innovation in the field.”

It is for these reasons that the Biennial Satellite Symposium is now, and will continue to be the flagship meeting of the Section on Tumors.

References

1. Barker FG, Linskey ME. History of the AANS/CNS Joint Section on Tumors and preface to the 20th Anniversary Journal of Neuro-Oncology Special issue. *Journal of Neuro-Oncology*. 2004; 69:1–18. [PubMed: 15527076]

**TUMOR SATELLITE SYMPOSIUM
OCTOBER 6-7, 1994**

Thursday	"ONCOGENESIS"
Moderators: 1:00 p.m. - 1:20 p.m. 1:20 p.m. - 1:45 p.m. 1:45 p.m. - 2:10 p.m. 2:10 p.m. - 2:35 p.m. 2:35 p.m. - 3:00 p.m.	Mark Israel, Mitch Berger Introduction: Mark Israel Web Caveness David James Phil Cogen Dan Fuhs
3:00 p.m. - 3:30 p.m.	BREAK
Moderators: 3:30 p.m. - 6:00 p.m. 6:00 p.m. - 8:30 p.m.	Bill Chandler, Darrel Bigner Session: Free Papers Buffet Dinner with poster review
Friday	"INVASION AND METASTASIS"
7:00 a.m. - 7:30 a.m.	Continental Breakfast
Moderators: 7:30 a.m. - 7:50 a.m. 7:50 a.m. - 8:15 a.m. 8:15 a.m. - 8:40 a.m. 8:45 a.m. - 10:05 a.m.	Mark Rosenblum, Peter Berger Introduction: Mark Rosenblum Jim Rutka Rolf Bjerkvig Session: Free Papers
10:05 a.m. - 10:30 a.m.	BREAK
	"NEW THERAPEUTIC CONCEPTS"
Moderators: 10:30 a.m. - 10:45 a.m. 10:45 a.m. - 11:10 a.m. 11:10 a.m. - 11:35 a.m. 11:35 a.m. - 12:00 p.m.	Peter Black, Larry Kun Peter Black Len Erickson (Drug Resistance) Rick Morrison (Antisense Strategies) Bob Martuza (Gene Therapy)
12:00 p.m. - 1:00 p.m.	LUNCH
Moderators: 1:00 p.m. - 3:00 p.m.	Roger Packer, Corey Raffel Session: Free Papers
3:00 p.m. - 3:30 p.m.	BREAK
Moderators: 3:30 p.m. - 3:55 p.m. 3:55 p.m. - 4:20 p.m. 4:20 p.m. - 4:45 p.m.	Skip Grossman, Mike Prados Victor Levin (Chemotherapy) Jay Loeffler (Radiosurgery) Ed Oldfield (Immunotoxin Therapy)
Moderators: 4:45 p.m. - 6:15 p.m.	Henry Friedman, Phil Gutin Session: Free Papers
6:15 p.m.	ADJOURN

Figure 1.

Outline of the program of the first Tumor Satellite Symposium demonstrating the diversity of speakers from multiple disciplines.

CNS
William Chandler
SOT Chair

Raymond Sawaya
Program Chair

AANS
Mark Bernstein
SOT Chair

James Rutka
Program Chair

AANS
Joseph Piepmeier
SOT Chair

Ronald Warnick
Program Chair

AANS
James Rutka
SOT Chair

Nalin Gupta
Program Chair

CNS 2004
Raymond Sawaya
SOT Chair

Frederick Lang
Program Chair

AANS 2007
Ronald Warnick
SOT Chair

Andrew Parsa
Program Chair

Figure 2.

Covers of the Program Books for the second to seventh Satellite Symposia. The affiliation (AANS or CNS) is listed below the cover along with the Chair of the Section on Tumors and the Scientific Program Chair. Note the different names and months (April or October) of the meeting. Also note the shift from years ending in even numbers to years ending in odd numbers.

Figure 3.

Covers of the Program Books for the last three meetings of the Satellite Symposia, all of which included the Society for Neuro-Oncology (SNO). The 2009 meeting was a joint meeting, with SNO joining the Section's Satellite meeting before the CNS Annual Meeting. The meeting was organized based on the SNO Annual meeting model but occurred before the CNS Annual Meeting. In 2011 the Section's Satellite Symposium was a satellite of the SNO Annual Meeting. In 2013 the Satellite Symposium returned to being a satellite of the AANS Annual Meeting, but SNO members participated by organizing a Meningioma Symposium (a symposium within the Symposium).

Table 1

Satellite Symposium Meeting Dates, Locations and Leaders

Date	Location (Affiliation)	Organizers
October 6–7, 1994	Chicago, IL (CNS)	Michel S. Berger, MD, <i>Scientific Chair</i> Peter M. Black, MD, PhD, <i>Section Chair (1993–1995)</i> *
October 3–4, 1996	Montreal, Quebec (CNS)	Raymond Sawaya, MD, <i>Scientific Chair</i> William F. Chandler, MD, <i>Section Chair (1995–1997)</i>
April 30–May 1, 1998	Philadelphia, PA (AANS)	James T. Rutka, MD, PhD, <i>Scientific Chair</i> Mark Bernstein, MD, <i>Section Chair (1997–1999)</i>
April 13–14, 2000	San Francisco, CA (AANS)	Ronald E. Warnick, MD, <i>Scientific Chair</i> Joseph M. Piepmeyer, MD, <i>Section Chair (1999–2001)</i>
April 11–12, 2002	Chicago, IL (AANS)	Nalin Gupta, MD, PhD, <i>Scientific Chair</i> James T. Rutka, MD, PhD, <i>Section Chair (2001–2003)</i>
October 21–22, 2004	San Francisco, CA (CNS)	Frederick F. Lang, MD, <i>Scientific Chair</i> Raymond Sawaya, MD, <i>Section Chair (2003–2005)</i>
April 13–14, 2007	Washington, DC (AANS)	Andrew Thomas Parsa, MD, PhD, <i>Scientific Chair</i> Ronald E. Warnick, MD, <i>Section Chair (2005–2007)</i>
October 22–24, 2009**	New Orleans, LA (CNS)	Joint with Society for Neuro-Oncology Randy L. Jensen, MD, PhD, <i>Scientific Chair, Section on Tumors</i> Frederick F. Lang, MD, <i>Scientific Chair, SNO</i> Michael W. McDermott, MD, <i>Section Chair</i> Jeffrey N. Bruce, MD, <i>Section Chair (2007–2009)</i>
November 17–20, 2011**	Orange County, CA (SNO)	Satellite to Society for Neuro-Oncology Annual Meeting Michael A. Vogelbaum, MD, PhD, <i>Scientific Chair, Section on Tumors</i> Timothy Cloughesy, MD, <i>Scientific Chair, SNO</i> Education Day: Eric Chang, MD (SNO); Arjun Sahgal, MD (SNO); Jason P. Sheehan, MD, <i>Section on Tumors</i> Jeffrey N. Bruce, MD, <i>Tumor Section Chair</i> Frederick F. Lang, MD, <i>Tumor Section Chair (2009–2011)</i>
April 26–27, 2013**	New Orleans, LA (AANS)	Nader Sanai, MD, <i>Scientific Co-Chair</i> Isaac Yang, MD, <i>Scientific Co-Chair</i> Michael A. Vogelbaum, MD, PhD, <i>Chair Meningioma Symposium (SNO)</i> Frederick F. Lang, MD, <i>Tumor Section Chair (2011–2013)</i>

* Tenure of Section Chair

** Held in collaboration with SNO

Table 2

Satellite Symposium Featured Topics and Speakers

Date	Location	Topic
October 6–7, 1994 (CNS)	Chicago, IL	<u>Featured Topics:</u> Gene Sequences Important in Oncogenesis; Invasiveness and Metastasis in CNS Tumors; New Concepts in Tumor Therapy
October 3–4, 1996 (CNS)	Montreal, Canada	<u>Featured Topics:</u> Radiobiology; Cell Growth Regulation; Epidemiology; Molecular Therapy
April 30–May 1, 1998 (AANS)	Philadelphia, PA	<u>Featured Topics:</u> Tumor Promoters and Suppressors; Angiogenesis and Invasion; Meningioma; Futuristic Therapies
April 13–14, 2000 (AANS)	San Francisco, CA	<u>Featured Topics:</u> Novel Delivery Systems; Skull Base Meningioma Treatment; Craniopharyngioma-Point Counterpoint; Translational Strategies for Pediatric Brain Tumors. <u>Keynote Speaker:</u> Dorell D. Bigner, MD, PhD
April 11–12, 2002 (AANS)	Chicago, IL	<u>Featured Topics:</u> Viral Therapy for Brain Tumors; Management of Low Grade Gliomas; Skull Base Chondrosarcomas and Chordomas; Primer on Current Molecular Techniques. <u>Special Lecturer:</u> Ralph Weichselbaum, MD <u>Keynote Speaker:</u> Arturo Alvarez-Buylla, PhD
October 21–22, 2004 (CNS)	San Francisco, CA	<u>Featured Topics:</u> Stem Cells and Brain Tumors; Molecular Imaging in Brain Tumors; Clinical Trial Design; Neurosurgical Oncology: Not Just Glioma Surgery <u>Keynote Speaker:</u> Patrick J. Kelly, MD
April 13–14, 2007 (AANS)	Washington, DC	<u>Featured Topics:</u> The Academic Community Alliance: A Cooperative Approach to Brain Tumor Therapy; Skull Base Tumors; International Symposium; Career Development
October 22–24, 2009 (CNS) Joint with SNO	New Orleans, LA	<u>Education Day:</u> Personalized Medicine: Is it the Future or Now? <u>Featured Topics:</u> Comprehensive Treatment Planning for GBM; Future Treatments of High Grade Glioma; Integrins; Neurosurgical Oncological Endoscopy; Meningiomas; Metastatic Spine Tumors; Epidemiology and Pharmacogenomics; Immunotherapy; Medulloblastoma; Omics and Brain Tumors; Genomics, Proteomics, Metabolomics, Ubiquinomics. <u>Keynote Speaker:</u> Raymond Sawaya, MD
November 17–20, 2011 (SNO) Satellite to Society for Neuro-Oncology Annual Meeting	Orange County, CA	<u>Education Day:</u> Stereotactic Radiosurgery and Radiation Biology in the CNS; Clinical Trials Course for Young Investigators; <u>Featured Topics:</u> Viral Gene Therapy; Surgery for Non-Malignant Skull Base Tumors; Cancer Cell Metabolism; Metabolic and Physiologic Neuroimaging; Brain Cancer Cells; Intraoperative Surgical Adjuncts; Neurological Complications of Cancer Therapy; Pontine Gliomas; Atypical and Malignant Meningiomas; Molecular Pathology; Immunobiology. <u>Keynote Speaker:</u> William G. Kaelin, MD
April 26–27, 2013 (AANS)	New Orleans, LA	<u>Featured Topics:</u> Animal Models; Immunotherapy; Multidisciplinary Management of Meningiomas. <u>Keynote Speaker:</u> Eric C. Holland, MD, PhD <u>Keynote Speaker:</u> Linda M. Liau, MD, PhD