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2009–2011

View From the Chairman



Jeff Bruce, MD

We are fortunate to be living at a time of great excitement in the field of neuro-oncology. Basic science advances have led to breakthroughs in molecular biology, immunology and cell biology that hold great promise

for brain tumor therapy. The Cancer Genome Atlas has altered the way we look at individual tumors and will facilitate the development of new targets for brain tumors and “personalized” therapies. Additionally, surgical advances including advanced imaging techniques, sophisticated navigation systems, awake brain mapping and fluorescence-guided intraoperative tumor localization have improved outcomes for our patients.

The Tumor Section provides a forum for furthering these developments by encouraging scientists and clinicians to advance this ever-expanding field. I expect that we will continue to see neurosurgeons leading the translational effort. This newsletter, along with our other Tumor Section activities, is designed to keep you informed of new developments and possibilities for funding, education and general support.

The October CNS meeting in San Francisco will highlight some of the latest and most exciting developments in our field, including a special seminar on cancer, neurosurgery, and nanotechnology organized by Atom Sarkar, MD, and Costas Hadjipanayis, MD. In addition, there will be numerous plenary sessions, luncheon seminars and practical

clinics devoted to brain-tumor-related themes. I am pleased that this newsletter highlights some of the many Tumor Section activities and reminds me how grateful I am to work with the talented and industrious group of individuals who contribute to the success of this organization.

Clinical Research Committee Update Christopher M. McPherson, MD

The American Brain Tumor Association Clinical Research Grant is a two-year, \$100,000 grant that supports clinical research trials designed to provide pilot clinical data by the end of the funding period. It funds research projects that have direct clinical application and is intended to help researchers develop projects that can then compete for larger grants such as those administered by the National Institutes of Health. The grant is open to any full-time neurosurgeon who is a member of the AANS/CNS Section on Tumors. Andrew Parsa, MD, PhD, of the University of California, San Francisco, was awarded the grant in 2009 for his project, “HSP Immunotherapy for Recurrent Glioma Patients: PI(3) Kinase Activation Predicts Poor Clinical Outcomes.” The next application deadline will be Jan. 15, 2011. Details will be forthcoming on the Tumor Section website, <http://www.tumorsection.org>.

Additional brain tumor funding opportunities are shown on page 6.

2010 AANS Award Winners

Jonas M. Sheehan, MD

The AANS/CNS Section on Tumors continues to offer 10 awards, one research grant and one combined Society for Neuro-Oncology/Tumor Section award administered through the Tumor Section Awards Committee. These awards are important for encouraging submission of top-quality work in neuro-oncology to the section's scientific meetings. Most of the awards are limited to Tumor Section members, providing an additional incentive for membership. The award winners for the 2010 AANS Annual Meeting were recognized at the Tuesday afternoon Tumor Section session.

Synthes Skull Base Award

The Synthes Skull Base Award is given to an attending neurosurgeon, resident or fellow within the Tumor Section who submits the best abstract related to skull base surgery. This award is given at the annual meetings of the AANS and the CNS. The winner for the 2010 AANS meeting was Jason P. Sheehan, MD, for his presentation "Gamma Knife Radiosurgery for Pituitary Adenomas: Factors Related to Radiologic and Endocrine Outcomes in a Series of 400-plus Patients." The award included a \$1,000 honorarium.



Jason P. Sheehan, MD

Preuss Award

The Preuss Award, sponsored by the Preuss Foundation, is given at each of the AANS and CNS meetings to a young scientist investigating brain tumors, within 10 years of training, who has submitted the best basic science research paper. The 2010 AANS winner was Viviane S. Tabar, MD, for her presentation, "Modeling Angiogenesis and Therapeutic Response to Notch Inhibition in a Novel 3-D Organotypic Culture System of Glioblastoma." Dr. Tabar received a \$1,000 honorarium.



Viviane S. Tabar, MD, left, and Jeff Bruce, MD

National Brain Tumor Society Mahaley Award

The NBTS Mahaley Award is given at each of the AANS and CNS meetings to a neurosurgery resident, fellow or attending physician who submits the best clinical study in neuro-oncology. At the 2010 AANS meeting, the award was presented to Nader Sanai, MD, for his paper, "The Value of Glioblastoma Extent of Resection: A Volumetric Analysis of 500 Patients." He was awarded a \$1,000 honorarium.



Nader Sanai, MD, left, and Jeff Bruce, MD

American Brain Tumor Association Young Investigator Award

Sponsored by the American Brain Tumor Association, the Young Investigator Award is given at each AANS and CNS meeting to a young faculty member involved in neuro-oncology research who has demonstrated outstanding potential for future basic science research. The applicant must have been out of training for fewer than six years. The 2010 AANS winner was Markus Bredel, MD, for his abstract entitled, "NFKBIA Deletion in Glioblastoma Multiforme." A \$2,000 honorarium accompanied this award.



Markus Bredel, MD

Integra Award



Isaac Yang, MD, left, and Jeff Bruce, MD

The Integra Foundation Award, sponsored by the Integra Foundation, is given at each of the AANS and CNS meetings for the best research or clinical paper submitted investigating benign brain, spinal or peripheral nerve tumors. At the 2010 AANS meeting, the winner was Isaac Yang, MD, for his presentation, "A Systematic Analysis of Survival Outcomes and Tumor Recurrence in Craniopharyngiomas." He received an award of \$1,000.

Springer Journal of Neuro-Oncology Award

The *Journal of Neuro-Oncology* Award is sponsored by Springer Publishers and is now presented at both the annual AANS meeting and the annual CNS meeting to a highly ranked abstract in either clinical or basic science related to neuro-oncology. The 2010 AANS recipient was Andrew Parsa, MD, for his paper entitled, "A Reliable Blood Biomarker That Can Be Used to Distinguish 'Treatment Effect' from Recurrent Glioma." A \$500 award and a framed certificate were given to the winner.



Andrew Parsa, MD, left, and Jeff Bruce, MD

Stryker Neuro-Oncology Award



Nicholas Marko, MD

The Stryker Neuro-Oncology Award is given to a high ranking brain tumor clinical or basic science abstract submitted by a resident or medical student. The award is presented at the CNS and AANS annual meetings, and the senior author of the paper must be a member of the Section on Tumors. The recipient of the 2010 AANS award was Nicholas Marko, MD, for his paper, "Preoperative ACTH Stimulation Test and Immediate Postoperative Cortisol Levels

Medical Neuro-Oncology

Susan M. Chang, MD

It is now well known in the neuro-oncology field that meningioma is the most common primary brain tumor seen in adults, and several important modifications in the classification of these tumors are changing the way we understand the disease and treat patients. The need for both a timely review of meningiomas and for research opportunities was identified by members of the AANS/CNS Section on Tumors, as well as other multidisciplinary colleagues in the field. This attention has resulted in a special issue of the *Journal of Neuro-Oncology*, "Meningiomas," which highlights a current review of the epidemiology, biology and treatment of meningioma and the identification of specific issues that require further investigation.

If there is one consensus to emerge from these articles, it is that a multidisciplinary effort across institutions is critical to collect data and perform the multivariate analyses required to understand how interactions between biological risk factors and environmental exposure lead to tumorigenesis. Maximal safe resection remains the most important therapeutic strategy for all grades of meningioma. Effective therapies beyond surgery and radiation therapy for recurrent benign, atypical and malignant meningiomas are urgently needed. There must also be a concerted effort to translate

the myriad of discoveries being made in molecular biology and epidemiology into new therapies, which can be achieved only through increased interaction between bench scientists and clinicians. To this end, members of the AANS/CNS Section on Tumors, the Society of Neuro-Oncology, and the Radiation Therapy Oncology Group have recently developed a Meningioma Working Group. The first meeting of the MWG occurred at the first joint meeting of the Tumor Section with the Society of Neuro-Oncology in New Orleans in 2009. The goal of this group is to encourage our colleagues in a variety of disciplines to participate in translational research and to foster the collaborations necessary to design and perform robust clinical trials for new therapies. We look forward to your participation at the special Meningioma Symposium during the Society of Neuro-Oncology Annual Meeting in Montreal, Canada, from Nov. 18 to 21.

We thank the guest editors for the issue (Susan Chang, MD, and Michael McDermott, MD), the authors for contributing their time and expertise on various topics related to meningioma, as well as the peer reviewers who provided helpful insights. We would also like to thank the editors of the *Journal of Neuro-Oncology* for their willingness to provide this forum for publication of these articles.

2010 AANS Award Winners *continued from page 2*

Accurately Predict Postoperative Hypothalamic-Pituitary-Adrenal Axis Function After Transsphenoidal Surgery." An award of \$1,000 was included with an award certificate.

Bittner Award

The Bittner Award is sponsored by Mrs. E. Laurie Bittner in memory of her husband, Ronald Bittner, and is awarded each year at the AANS Annual Meeting to the author of the best abstract submitted by a resident or junior faculty member. The 2010 AANS winner of the Bittner Award was Michael Sughrue, MD, for his submission entitled, "The Natural History of Untreated Vestibular Schwannomas: A 20-Year Prospective Observational Study." This award includes a \$1,000 honorarium.



Michael
Sughrue, MD

Leksell Award

The Leksell Award is given each year at the AANS Annual Meeting for the best submission related to stereotactic radiosurgery and includes a \$2,000 honorarium. The 2010 AANS Leksell Award winner was Raqeeb Haque, MD, for his abstract entitled, "Efficacy of Facial Nerve-Sparing Microsurgery and Stereotactic Radiosurgery with Gamma Knife in Preserving Facial Nerve Function in Patients with Recurrent Acoustic Neuromas."



Raqeeb Haque, MD

BrainLAB International Research Fellowship

The BrainLAB International Research Fellowship was established to provide support for neurosurgeons outside the U.S. to conduct clinical, basic or translational research in neuro-oncology inside the U.S. BrainLAB has graciously provided \$50,000 to support salary and expenses for one year for the fellowship winner. The 2010 fellowship was awarded to Felix I. Nwajei, MBBS, of Lagos, Nigeria. Dr. Nwajei will be working on a project entitled, "Evaluating the Biology of Therapeutic Mesenchymal Stem Cells using RCAS/Tva Glioma Model" under the mentorship of Frederick Lang, MD, at MD Anderson Cancer Center in Houston.



Felix I. Nwajei, MBBS

The Section on Tumors would like to thank the award sponsors for helping to encourage submission of the highest quality work in neuro-oncology. Congratulations to the 2010 AANS Annual Meeting award winners.

2010 CNS Annual Meeting: Tumor Section Seminar

Costas G. Hadjipanayis, MD, PhD, and Atom Sarkar, MD, PhD

A special Tumor Section seminar entitled “Cancer, Neurosurgery, and Nanotechnology—A New Triumvirate” will be held on Tuesday, Oct. 19, from 1:30–3 p.m. at the 2010 CNS Annual Meeting in San Francisco. This new seminar will focus on cancer nanotechnology and its applications in neurosurgery.

Nanotechnology belongs to the category of so-called disruptive technologies, which are innovations that are capable of breaking existing barriers and offering previously unexpected benefits. In the cancer context, nanotechnology can lead to a generation of new diagnostic and therapeutic products, which may result in improved cancer outcomes. This special seminar will include speakers from the National Cancer Institute and the Georgia Institute of Technology, as well as the editor-in-chief of *Cancer Nanotechnology: Basic, Translational, and Clinical Research*. At the conclusion of this session, participants will be able to describe applications of nanotechnology with regard to oncology and, in particular, neuro-oncology. As the topic is novel, much of the session will be crafted to acquaint participants with the vernacular of nanotechnology and its current, as well as future, applications for neurosurgeons.

Cancer, Neurosurgery, and Nanotechnology—A New Triumvirate

1:30–3:00 PM Tuesday, Oct. 19, 2010

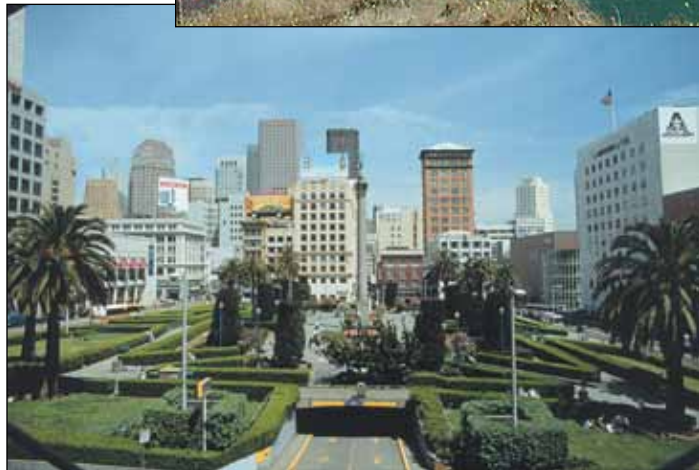
Moderators: Costas G. Hadjipanayis, MD, PhD, and Atom Sarkar, MD, PhD

Introduction by Atom Sarkar, MD, PhD, director of surgical neuro-oncology, associate professor of neurosurgery, Center for Translational Neurosciences, University of Arkansas College of Medicine

“NCI Alliance for Nanotechnology in Cancer—An Opportunity for a New Class of Diagnostic and Therapeutic Oncology Tools.” Piotr Grodzinski, PhD, director of Nanotechnology for Cancer Programs at the Alliance for Nanotechnology in Cancer of the National Cancer Institute

“Brain Tumor Nanotechnology: New Opportunities in Image-Guided Surgery and Targeted Therapy.” Shuming Nie, PhD, the Wallace H. Coulter Distinguished Faculty Chair in Biomedical Engineering and director of the Emory University-Georgia Institute of Technology Cancer Nanotechnology Center

“Targeted Gold Nanoconjugates for Molecular Imaging and Therapy.” Raghuraman Kannan, PhD, editor-in-chief, *Cancer Nanotechnology: Basic, Translational, and Clinical Research*, Michael J. and Sharon R. Bukstein Distinguished Faculty Scholar in Cancer Research, Department of Radiology, University of Missouri-Columbia



“Convection-Enhanced Delivery: A Promising Approach for Brain Tumor Nanotechnology.” Costas G. Hadjipanayis, MD, PhD, chief of neurosurgery at Emory University Hospital Midtown, director of the Brain Tumor Nanotechnology Laboratory, Georgia Cancer Coalition Distinguished Scholar, Emory University School of Medicine

Guidelines Committee

Steven N. Kalkanis, MD

This year the Tumor Section Guidelines Committee in conjunction with the Spine Section launched a new guidelines project involving comprehensive treatment recommendations for spine metastases. Timothy Ryken, MD, is leading this multidisciplinary effort involving all aspects of metastatic spine disease, including radiographic assessment; medical management; indications for surgery; radiotherapy and combination treatments; implantable devices including pain pumps; vertebral augmentation (kyphoplasty/vertebroplasty); preoperative embolization; and pathology-specific recommendations. This guidelines project has proven to be an excellent opportunity for collaborating with another section as well, and preliminary drafts are pending later this year for review by our Joint Guidelines Committee and the leadership of our parent organizations.

The major focus of the Tumor Section Guidelines Committee over this past year involved the completion, endorsement and publication of the country's first evidenced-based, multidisciplinary clinical treatment guidelines for brain metastases. A team of 20 experts from neurosurgery, radiation oncology, neuro-oncology and medical oncology, along with epidemiologists from the McMaster Evidenced-Based Practice Centre, completed 10 chapters outlining recommendations for all facets of the clinical treatment of brain metastases. These chapters included guidelines on the roles of whole brain radiation therapy, surgical resection, stereotactic radiosurgery, chemotherapy, anticonvulsants and corticosteroids, as well as

sections on recurrent and progressive metastatic disease and new and emerging therapies for brain metastases. This effort was spearheaded by the Tumor Section and endorsed by the Joint Guidelines Committee and the executive committees of both the CNS and the AANS. Links to the manuscripts, which were published in the *Journal of Neuro-Oncology* in January 2010, can be found on the Tumor Section website (<http://www.tumorsection.org>).

Since the publication of the brain metastases guidelines, our official recommendations have been cited numerous times in recent publications and on neurosurgery, radiation oncology and neuro-oncology websites. The guidelines also have played a role in the healthcare debate in Washington as examples of recommended standards of care for brain tumor management. Tumor Section representatives have been asked to present a summary of our guidelines process to the national meeting of the American Society for Therapeutic Radiology and Oncology in November 2010; the guidelines were a featured subject of one of the CNS webinars earlier this year, and they are also the focus of a practical course and luncheon seminar at this year's CNS meeting in San Francisco. In January 2011 we expect to complete a one-year update on the status of the highlighted clinical trials and ongoing studies referenced in the brain metastases guidelines documents, and we are also in the process of translating the guidelines into the native languages of our liaison members.

Membership Committee

Jeffrey J. Olson, MD

The AANS/CNS Tumor Section is the leading organization of neurosurgeons with a stated special interest in the therapy of tumors involving the nervous system. The section currently has 2,273 members on its roster. This includes 571 Active members and 1,511 Resident members. The membership includes special membership categories (International, Associate, Honorary, and Adjunct) so as to accommodate the participation in section activities by as many interested individuals as possible. Additional information on membership categories is available at <http://www.tumorsection.org/membership/types.htm>.

The Tumor Section is dedicated to education and training of young neurosurgeons, and an individual's entrance into an accredited North American neurosurgical residency results in automatic enrollment in the Tumor Section. There is no cost for Resident membership, and after completion of residency the Resident members are notified of the opportunity to become Active members and provided with temporary reduction in annual dues for the first year after completing training.

Current annual membership dues are \$150 for Active members, \$75 for International members, \$37.50 for Adjunct members, and no cost for Associate members. Benefits include semiannual newsletters; a 50 percent discount on the *Journal of Neuro-Oncology*; reduced registration at the section's biennial Tumor Satellite meeting, most recently held in conjunction with the Society for Neuro-Oncology and access to the members-only component of the website, which offers information on clinical trials, research funding, tumor treatment guidelines and topic reviews.

The Tumor Section serves as the official voice of the AANS and the CNS in matters related to tumors. Additionally, it deals with numerous tumor-related issues including new CPT codes, resident and fellowship education, and research initiatives, rewarding the finest efforts with a series of awards for meritorious research. It is important that Active members inform residents that they too are members of this organization so as to encourage their participation and make them aware of the benefits available.

Brain Tumor Research Funding Opportunities

John A. Boockvar, MD

Organization	Type	Description	Eligibility	Award	Due Date(s)	Duration	Phone	E-mail for Questions	Website
The Sontag Foundation	Grant	Research/Career development	Doctorates in biomedical sciences medicine or other health-related fields	150K per year (600K total)	3/1/11 Check website	4 years	904-273-8755	kverlie@sontagfoundation.org	http://www.sontagfoundation.org
Accelerate Brain Cancer Cure	Grant	Translational		250K	TBA	1 year	202-419-3140	david.sandak@abc2.org	http://www.ab2.org
Musella Foundation for Brain Tumor Research	Grant	All that works		10K-50K	None	None	516-295-4740	musella@virtualtrials.com	http://www.virtualtrials.com
American Brain Tumor Association	Fellowship	Basic research	Young researchers entering the field	80K	TBA	2 years	847-827-9910	info@abta.org	http://www.abta.org
	Grant	Translational	Early career investigators	75K	TBA	1 year			
	Fellowship	Summer research	Medical students	3K	Check website	1 year			
James S. McDonnell Foundation	Grant	Translational	PI's holding position of assistant professor or above	450K	Check website 12/1/2010	3-6 years	Website	Website	http://www.jsmf.org/apply/
	Collaborative activity awards	Multi-institutional, multidisciplinary or multi-investigator	Same as above with emphasis on strong multi-institutional collaboration no geographic restrictions	Flexible	No deadline; LOI needed only	Flexible			
Pediatric Brain Tumor Foundation	Grant	Basic science		50K	TBA	1 year	828-665-6891	dtraynot@pbtfus.org	http://www.pbtfus.org
Goldhirsh Foundation	Grant	Research/translational	Must hold an MD and/or PhD or equivalent degree and must hold a faculty position in U.S., Canada or Israel	100K, 200K or 600K	Initial proposal due: TBA	1 or 3 years	617-279-2254	smcneary@goldhirshfoundation.org	http://www.goldhirshfoundation.org
AACR	Fellowship	AACR-NBTF	Postdoctoral or Clinical Research Fellow	40K	Check website	1 year	267-646-0665	grants@aacr.org	http://www.aacr.org/funding
Sidney Kimmel Foundation	Scholar Award	Basic science	MD, PhD or equivalent degree & be assistant professor	100K	Check website Dec 2011	2 years	443-849-3729	gcohen@gbmc.org	http://www.kimmel.org/Cancer_Research28.html
	Science Award	Translational	MD, PhD or equivalent degree & be assistant professor	100K	Check website	TBA			
Brain Tumor Funders Collaborative	Grant	Transitional & clinical	Check website	Check website	Check website	N/A	Website	Through each of the organizations involved	http://www.braintumorfunders.org
NREF	Fellowship	Research	Neurosurgery residents	40K or 70K	Check website	1 or 2 years	847-378-0500	nref@aaans.org	http://www.aaans.org/research/fellowship
	Grant	Clinical	Young faculty, physicians or neurosurgeons	40K		1 year			
William P. Van Wagenen	Fellowship	Travel abroad	Senior neurosurgical residents and must pursue an academic career in neurosurgery	60K	Check website	12 months	847-378-0500	info@aaans.org	http://www.aaans.org/research/fellowship/aans.asp
Codman Fellowship in Neurotrauma and Critical Care	Fellowship	Basic/applied clinical	Neurosurgery resident in training	40K	TBA	1 year	N/A	msg@aaans.org	http://www.codman.com
AAANS/CNS	4 Fellowships	Spine or peripheral nerve	Residents or neurosurgeons depending on fellowship	5K-30K	12/1/2010	1 year	412-647-0958	gersztenpc@upmc.edu	http://www.spineaction.org/fellowships_awards.php
	3 Research grants			15K-30K			414-805-5400	mwang@mcw.edu	
	Trial proposal	Spine clinical	Neurosurgical junior faculty	50K			N/A	zoher.ghogawala@yale.edu	
	Fellowship		Neurosurgical residents/fellows/junior faculty	50K					

Organization	Type	Description	Eligibility	Award	Due Date(s)	Duration	Phone	E-mail for Questions	Website
NIH	Grant	R01		R01 New: Cycle I - Feb 5; Cycle II - June 5; Cycle III - Oct 5 R01 renewal, resubmission and revision: Cycle I - March 5; Cycle II - July 5; Cycle III - Nov 5					http://grants.nih.gov/grants/grant_basics.htm
		R21		R21 New: Cycle I - Feb 16; Cycle II - June 16; Cycle III - Oct 16 R21 renewal, resubmission and revision: Cycle I - March 16; Cycle II - July 16; Cycle III - Nov 16					http://grants.nih.gov/grants/funding/submissionschedule.htm
		K12 and K22		K12 and K22 New: Cycle I - Feb 12; Cycle II - June 12; Cycle III - Oct 12 K12 and K22 renewal, resubmission and revision: Cycle I - March 12; Cycle II - July 12; Cycle III - Nov 12					
The Childhood Brain Tumor Foundation	Grant	Basic science/translational	Investigators in the early years of their careers	25-30K	Check website	1 or 2 years	301-515-2900	cbtf@childhoodbraintumor.org	http://www.childhoodbraintumor.org
Children's Brain Tumor Foundation	Grant	Basic science/translational	Investigators in the early years of their careers	150K	Check website	2 years	212-448-9494	info@cbtf.org	http://www.cbtf.org/professionals/grants
Society for Neuro-Oncology International Outreach	Fellowship	Research	Postgraduate medical professionals working in neurosurgery, neurology, radiation, oncology, medical oncology, pathology, radiology; check website	50K	Call for app: 06/23/10 App deadline: 10/18/10	1 year	N/A	Contact desired host institution. Sponsored by American Brain Tumor Association and EMD Serono	http://www.soc-neuro-onc.org/international-outreach-research-fellowship/
The Ben & Catherine Ivy Foundation	Grant	Research/translational	PIs must be early career researchers who received MD and/or PhD in the last 10 years; post-doc fellows eligible as well	1.0M max	TBA	3 years	650-324-3000	info@ivyfoundation.org	http://www.ivyfoundation.org/apply-grant
Voices Against Brain Cancer	Grant	Research/nonresearch	PIs must be MDs or PhDs in relevant fields and must be affiliated with or on staff of U.S. research or medical institution	20K	Check website	1 year	N/A	grants@voicesagainbraincancer.org	http://www.voicesagainbraincancer.org
Department of Defense	Grant	Research	Unrestricted but subject to clarification	1.75M	Check website	N/A	301-619-7079	cdmrip.pa@amedd.army.mil	http://www.grants.gov/search/search.do?mode=VIEW&oppid=48121
Brain Research Foundation	Grant	Research	Young investigators and senior faculty	40K	Check website	1 year	312-759-5150	info@theBRF.org	http://www.thebrf.org
ThinkCure!	Grant	Collaborative research	N/A; check website	N/A	Proposal deadline: April 1 always	1 year	323-224-1360	info@thinkcure.org	http://www.thinkcure.org/site/PageNavigator/research/research_grant_updates
Clinical Research Professor	Grant	Research		Up to 80K	CV & LOI: Aug 1 App Deadline: Oct 15	5 years 1 Renewal	404-329-7550	john.stevens@cancer.org	http://www.cancer.org/docroot/RES/content/RES_5_2x_Clinical_Research_Professorships.asp?sitearea=RES
Research Professor	Grant	Research	Full-time investigators in mid-career with seminal contributions to cancer research	Variable	CV & LOI: Feb 1 App Deadline: April 1	5 years 1 Renewal	404-329-7550	john.stevens@cancer.org	http://www.cancer.org/docroot/RES/content/RES_5_2x_Research_Professorships.asp?sitearea=RES
Investigator Initiated Grants	Grant	Basic/translational		150K max & 10% indirect cost (75K max per year)	Check website	2 years Renewal once	800-843-8114	research@aicr.org	http://www.aicr.org/site/PageServer?pagename=research_funded_grant_application

Organization	Type	Description	Eligibility	Award	Due Date(s)	Duration	Phone	E-mail for Questions	Website
U.S. Clinical Research Investigators	Grant	Basic/translational		Variable	11/1/2010	N/A	Website	ist.help@bms.com	http://www.bms.com/clinical_trials/investigator_sponsored_research/Pages/default.aspx
Preclinical Research	Grant	Research		Variable	Check website	N/A	Website	ist.help@bms.com	http://www.bms.com/clinical_trials/investigator_sponsored_research/Pages/default.aspx
Prevent Cancer Foundation Grant	Grant	Research	Check website; PI or fellow receiving the award must not receive funding from the tobacco industry	40K per year (80K total)	Check website	2 years	702-836-4412	info@preventcancer.org	http://www.preventcancer.org/research2c.aspx?id=32&ekmense=15074e5e_28_30_32_1
Investigator Award	Grant	Basic/translational	Must hold a doctoral degree and be a tenure-track assistant professor at time of award activation.	50K per year (200K total)	3/1/2010	4 years	212-688-7515	grants@cancerresearch.org	http://www.cancerresearch.org/InvestigatorApplication.html
The Craig H. Neilsen Foundation	Grant	Basic/preclinical for spine injury	Postdoctoral (for fellowship); researchers and clinicians may apply for the grants	Variable	LO: 08/20/10 App deadline: 12/1/10	2 years	702-567-7072	N/A	http://www.chnfoundation.org
National Brain Tumor Society	Stage 1 grant	Basic research	All may apply; open to the national and international community. May be from public or private institutions (e.g. hospitals, universities, colleges, laboratories)	40K-100K	App deadline: 12/17/10	1 year	617-924-9997	"Contact Us" on website	http://www.brainumor.org/ApplyForAGrant/
	Stage 2 grant	Translational application	Same as above; this award is contingent on successful stage 1 funding only.	500K or greater	Contingent on stage 1	3 years			
Miles for Hope Foundation	Grant	Basic/translational and innovative research	All may apply; U.S. only	250K max	No deadline	1 year	727-781-4673	N/A	http://www.milesforhope.org/brain-tumor-research-grant
Caregiver Research Grant NBTI and Tug McGraw	Grant	Qualitative/quantitative and interventional	Check website	30K	Check website	N/A	Website	"Contact Us" on website	http://www.tugmcgraw.org/grants/default.asp
SPORE in Human Cancers	Grant	Basic/translational	Check website section III for list of eligible institutions. Eligible individuals are those with skills, knowledge and resources necessary to carry out the proposed research.	Variable (min 50K)	LO: Multiple; see website. App deadline: (same)	5 years	Website	Website	http://www.grants.nih.gov/grants/guide/pa-files/PAR-10-003.html

PI = principal investigator

Note: For other possible funding sources see <http://www.abta.org/index.cfm?contentid=281&ABTA-%20Fellowships-%20Grants> and <http://www07.grants.gov>.

NREF Post-Residency Clinical Fellowship Program

Beth S. Stein

The Neurosurgery Research and Education Foundation is accepting applications in all areas, including neurosurgical oncology, for the new NREF Post-Residency Clinical Fellowship Program in the 2011–2012 academic year.

With funding for medical research and neurosurgical education needed now more than ever and government support diminishing, the funding given directly to hospitals and academic programs by corporate supporters continues to come under increased scrutiny. The NREF has expanded beyond its traditional research grants and young clinician awards to make an even bigger impact.

The NREF entered into agreements with DePuy Spine Inc. and Codman & Shurtleff Inc. in fiscal 2010 to provide funding to the NREF in support of the foundation's new Post-Residency Fellowship Program. Under the terms of these agreements, DePuy Spine provided funding to the NREF for fellowships with a focus on spine, and Codman provided funding for fellowships with a focus on neurosurgery and neurocritical care. These agreements have served the dual purpose of enabling the NREF to support neurosurgical education in another meaningful way while also allowing DePuy Spine and Codman to continue their support of high-quality education and training in spinal care and other neurosurgical specialties in a transparent and independent manner. In addition, the NREF anticipates adding a third funding partner, Medtronic, for the 2011–2012 fellowship funding program.

The NREF is accepting applications for the 2011–2012 Post-Residency Clinical Fellowship Grant Program pending confirmation of funding commitments. Institutions are encouraged to apply

for funding for clinical neurosurgical fellowships with a variety of focuses including, most notably for members of the AANS/CNS Section on Tumors, neurosurgical oncology, as well as other areas such as spine surgery, general neurosurgery, neurocritical care, cerebrovascular-related fellowships, pediatric neurosurgery, peripheral nerve surgery, and stereotactic functional neurosurgery. Fully funded spine fellowships will be up to \$75,000 per year and all others up to \$50,000 per year.

For all programs, grants may be awarded in lesser amounts, depending on the need and the support available. Fellowship grant funding is intended to cover the stipend for the fellow. Among the other allowable expenses are salary and benefits, education and research expenses (travel and registration fees to nationally recognized meetings/courses), books, licenses and malpractice insurance.

As was the case last year, the NREF will be responsible for all aspects of the fellowship grant program, including acceptance, review and approval of fellowship grant applications. The NREF will award fellowship grants based upon established program eligibility criteria and the needs of the requesting institution.

The NREF is pleased to announce 11 programs received funding for 2010–2011 due to the generous support of DePuy Spine Inc. and Codman & Shurtleff Inc.

For more information about the program or for a 2011–2012 fellowship grant application, please visit <http://www.aans.org/research>. The application submission deadline is Oct. 29, 2010. Questions may be directed to NREF's Michele S. Gregory, msg@aans.org, or Beth S. Stein, bss@aans.org, 847-378-0500.

2011 AANS Annual Meeting: Tumor Section Symposia

Allen Waziri, MD

The AANS/CNS Section on Tumors will convene once again for two dedicated scientific symposia as part of the 2011 AANS Annual Meeting in Denver. During the first half of each afternoon session, to be held on Tuesday, April 12, and Wednesday, April 13, experts will review the field and outline their personal experience in two separate topic discussions.

Given recent positive data, and with increasing dissemination of technological advances, the first afternoon session will begin with a discussion entitled, "Maximizing Extent of Resection for Low- and High-Grade Gliomas: Why Should We, and How Would We?" The topic will be introduced and an overview of "why?" will be provided by Mitchel Berger, MD. Hugues Duffau, MD, will continue the discussion by reviewing his experience with intraoperative mapping for maximizing resection of low-grade gliomas. Volker Seifert, MD, will present an overview of recent advances in intraoperative MRI techniques, and the session will conclude with a review by David Roberts, MD, of intraoperative fluorescence-guided tumor resection using 5-aminolevulinic acid.

The second afternoon symposium will focus upon "Emerging Adjuvant Options for Malignant Gliomas." Krzysztof Bankiewicz, MD, and Russell Lonser, MD, will discuss technical considerations for convection-enhanced delivery and the treatment of brainstem gliomas using this technique. Fred Lang, MD, and Isabelle Germano, MD, will outline their recent experience with the use of bone-marrow derived mesenchymal stem cells and embryonic stem cells as vectors for therapeutic delivery to malignant gliomas. Maciej Lesniak will discuss recent work from his laboratory that has continued to advance options for virotherapy in glioblastoma. Lastly, Costas Hadjipanayis, MD, will describe the development and use of nanoparticles for therapeutic delivery.

As always, each session will conclude with a series of award-winning and highly ranked abstracts submitted to the Tumor Section. It is a critical time in our continued struggle to improve treatment options for patients with malignant brain tumors, and recent work has shown that neurosurgeons continue to be at the forefront of these efforts. We look forward to seeing you in Denver!

International Committee

Khaled Aziz, MD, PhD

The Tumor Section continues to strengthen its connections with colleagues across the globe through an active exchange of information concerning current developments in tumor research and therapies.

Brief summaries from a few of the section's liaisons are included below, and additional reports follow.

Belgium

Florence Lefranc, MD, PhD

In Belgium, the prevailing research themes presently include:

1. Targeting galectin-1 in GBMs in order to impair tumor immune escape, neoangiogenesis, chemoresistance and GBM cell migration in the brain parenchyma.
2. Impairing the alpha-1 subunit of the sodium pump as a novel targeted therapy to combat malignant glioma cells.
3. The use of narciclasine, an Amaryllidaceae isocarboxystyl, to overcome the intrinsic resistance of GBM cells to apoptosis.
4. The most significant clinical trial is AVAGLIO, Roche's ongoing phase III clinical study of the combination of bevacizumab with temozolomide for newly diagnosed glioblastomas.

Switzerland

Dominik Cordier, MD

One important goal in Switzerland is the establishment of a brain tumor bank to collect patient data, develop clinical courses, and record histopathologic and genotypic features of tumors, as well as patient response to therapy and higher numbers of rare tumor subtypes such as pleomorphic xanthoastrocytoma.

Tumor Section Now Accepting Applications for 2011 International Fellowship

Khaled Aziz, MD

The AANS/CNS Section on Tumors is pleased to announce it is accepting applications for the 2011 AANS/CNS Section on Tumors/BrainLAB International Research Fellowship. The name recognizes the partnering of the Tumor Section with BrainLAB AG, which provided an educational grant in support of this fellowship program.

This fellowship is open to international neurosurgeons or graduating residents from outside the United States or Canada to perform clinical, translational or basic research in the field of neurosurgical oncology in a clinical setting and/or laboratory. The fellowship amount of \$50,000 is to be used for travel expenses and salary support for a period of one year.

For more information and an application, please visit the Tumor Section website at <http://www.tumorsection.org>. The application deadline is Nov. 15.

Egypt

Hossam El Huseiny, MD, PhD

The Egyptian Society of Neurological Surgery is presenting its annual meeting in March 2011 in Cairo. Speakers from around the world are expected. The meeting will cover all aspects of neurosurgery, in particular neuro-oncology and skull base surgery. The society is looking forward to welcoming participants from the Tumor Section.

France

Sebastien Froelich, MD

Dr. Froelich is finishing his PhD in molecular biology on nuclear receptors and co-factors in brain tumors, with a special focus on meningiomas. This research is supported by the tumor bank at the University of Strasbourg. The university will be organizing two courses entitled "Microscopic and Endoscopic Approaches to the Skull Base" that will take place at the Research Institute against Cancer of the Digestive System in Strasbourg (<http://www.ircad.fr>) in January and June.

International Reports

Italy

Francesco DiMeco, MD

The 9th International Symposium, "Updates in Neuro-Oncology," was held in the beautiful Etruscan town of Cortona in the heart of Tuscany, on July 2-4.

The meeting, which is part of a series of collaborative symposia of the Istituto

Neurologico Besta of Milan, Italy; Vanderbilt University; the Ohio State University; and Johns Hopkins University, has been additionally supported this year by MD Anderson Brain Tumor Center, Tel Aviv Medical Center, and Mayfield Institute. The meeting was also supported by the AANS/CNS Section on Tumors, the Neuro-Oncology Committee of the European Association of Neurosurgical Societies, and the Italian Neurosurgical Society, known as SINCH.

The Tumor Section has been active in the organization of the meeting, contributing both with speakers and with help in setting up what has once again resulted in an exceptionally interesting scientific program.

The outstanding international speakers' panel and the topics covered by the meeting provided a comprehensive review of the most recent advances in the field of neuro-oncology, including extensive insights regarding the role of stem cells in the pathogenesis of gliomas and the implications for future therapies. In addition, the picturesque and cozy frame of Cortona,



A compelling view of Cortona from the Villa Marsili Hotel Balcony.

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coupled with the traditional Italian convivial atmosphere, greatly contributed to the success of the meeting.

The Scientific Committee and organizers of the meeting thankfully acknowledge the Tumor Section for its invaluable contribution to the success of the symposium.

Central America

Jose Edgardo Valerio-Pascua, MD

This has been a successful year in neurosurgery oncology in Central America. As part of a continued effort to develop neurosurgery oncology groups and to increase the knowledge of the use of technology in this field, we have been working and collaborating with different countries in this region.

In May we developed a group of young neurosurgeons in the field of neuro-oncology who will participate this year in the Congress of Latino-American Neurosurgeons (CLAN 2010) in El Salvador and in the CNS Annual Meeting in San Francisco. We created an initiative of academic development in Mexico, Honduras, El Salvador, Costa Rica, Panama, Jamaica, and the Dominican Republic. Also in May, we participated in the National Congress of Neurosurgery in Puerto de La Cruz, Venezuela.

In June we created the first neurosurgery-oncology symposium and workshop of neuronavigation in Latin America. This took place in Bucaramanga, Colombia, and involved the participation of neurosurgeons from Peru, Ecuador, and Colombia.

In July we held a neuronavigation workshop in cranial and spine surgery in Quito, Ecuador, with participation of neurosurgeons from the region.

In August we began coordinating an academic program consisting of neuro-oncology and image guidance, which is going to involve neurosurgeons from Latin America, especially from Central America, who have experience in navigation. This program will take place from Oct. 22 to 23, immediately before the CLAN 2010 meeting in El Salvador.

During CLAN 2010, we will participate in the development of the requirements of the curriculum for the neurosurgery oncology specialty. For the first time, a symposium of young neurosurgeons specializing in brain tumors will take place during CLAN 2010 on Oct. 27.

In November the AANS/CNS Tumor Section will participate with the Brain Tumor Society of Mexico, the Hospital Centro Medico Nacional Siglo XXI, and the Neurosurgery College of Guanajuato in an international meeting in Mazatlan, Mexico. Participants will include Jeffrey Bruce, MD, Jose Valerio, MD, Edward Benzel, MD, Nelson M. Oyesiku, MD, Chandranath Sen, MD, John C. Chiu, MD, and John Jane Jr., MD. The purpose of these academic activities is to maintain the relationship between these two societies.

In addition, an invitation has been extended to the Tumor Section to participate in the Mexican Neurosurgery National Congress in June 2011 in Acapulco, Mexico. The Panama Society of Neurosurgery also has invited us to participate and collaborate with them for their first Brain Tumor Neurosurgery Meeting in February 2011.

Lastly, a network of hospitals has been created in Latin America and the U.S. for the treatment of brain tumors. The participating countries in this network are Mexico, Jamaica, El Salvador, Costa Rica, Panama, Dominican Republic, Colombia, Ecuador, Venezuela, Brazil, and the U.S. This group's goal is an interactive evaluation of brain tumor treatment and diagnosis among hospitals using the Internet as a link for these academic interactions.

We are very excited about the progress we have made so far in 2010 and are looking forward to the events that are still ahead.

England

Nitin Mukerji, MD, MRCSEd

The Society of British Neurological Surgeons met at Robinson College, Cambridge, in March. This SBNS meeting attracted a record number of abstract submissions and was a grand success. Discussions took place on a wide range of topics, including the future organization of services and training and a number of clinical subjects.

The SBNS and the University of Cambridge ran the first neuro-oncology trainee course at Robinson College in June. This was organized as a combination of lectures and interactive sessions with senior faculty discussing operative approaches and management strategies. The course received very good feedback, and we are hopeful that it will be incorporated into a series of trainee courses on various aspects of neurosurgery.

The British Neuro-Oncology Society met in June at the University of Glasgow. Discussions centered on the obstacles to research, development of new therapies, access to pathological tissue in the wake of new regulations, and latest multimodality treatment of gliomas and metastases. There were satellite sessions for the British Neuropathological Society and the Association of Neuro-Oncology Nurse Specialists. The meeting was well attended.

Additional meetings include the SBNS autumn meeting in London and the European Association of Neuro-Oncology meeting in Maastricht, Netherlands, both in September 2010.

Scotland

Sam Eljamel, MD

Surgeons in the European Union may perform fluorescence-guided resection of high-grade gliomas with appropriate certification and training. Dundee, Scotland, is an approved training site, and so far two courses have been held with six-to-eight surgeons in each course. The course involves hands-on training in the OR.

The British Neuro-Oncology Society met in Glasgow, Scotland, on June 23–24. The meeting kicked off on Wednesday morning with a postgraduate symposium themed, "Succeeding in Neuro-oncology Research" in which young neuroscientists described their experiences during the early stages of their postgraduate studies, highlighted the ups and downs in a research career, and gave tips on how to succeed. A talk from neurosurgery residents highlighted the practical difficulties in combining clinical and research work and alluded to some regional differences in the current training system. This was an extremely useful session for residents.

The afternoon symposium speakers included Martin van den Bent, MD, of Rotterdam, Netherlands, who discussed the pseudoprogression

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in malignant glioma and highlighted the difficulties faced in the outcome of assessment and randomization in clinical trials. This was followed by a presentation by Manfred Westphal, MD, of Hamburg, Germany, on developing new therapies, emphasizing various local therapies for malignant glioma. David Ellison, MD, of Memphis, Tenn, discussed his pioneering research on clinical subgroups of medulloblastoma defined by pathological and molecular analysis. The symposium ended with a neurologist's interesting perspective on how to tackle medical problems in glioma.

Thursday began with a breakfast symposium themed, "Achieving Greater Access to Tissue in Neuro-Oncology Research." The speakers highlighted the difficulties in procuring tissue for neuro-oncology research. Issues about Health Technology Assessment licensing and consent were discussed. The neuropathologists' perspective and their pivotal role in banking tissue for research were discussed; also highlighted were the difficulties faced while setting up research tissue banks and tips on how to tackle them.

The next two scientific sessions included presentations on the medical, surgical and pathological aspects of glioma. This was followed by a lunchtime symposium sponsored by Archimedes Pharma Ltd. Topics included experience with fluorescence-assisted techniques using 5-aminolevulinic acid for resection of malignant glioma. This was soon followed by a symposium sponsored by the British Neuropathological Society where the common pitfalls in surgical neuropathology and the difficulties in grading gliomas using the World Health Organization criteria were discussed. The new IDH1 marker and its impact on diagnosis and therapy of brain tumors were also discussed. The program ended with a third scientific session that included interesting papers on genetics, signaling pathways, novel therapies and stem cells in glioma.

The last day of the meeting included two scientific sessions with presentations on clinical and radiological aspects of brain tumors. The "British Neuro-Oncology Society Young Investigator Award" for research on stem cells and glioma was given. Many brain tumor charities and patient care groups offered excellent exhibits at the meeting. The posters presented at the meeting were high-quality and thought-provoking.

The autumn meeting of the Society of British Neurological Surgeons was hosted in London, Chelsea, on Sept. 8–10, and the British Neurosurgery Research Group will be hosted in Dundee, Apex Hotel at Victoria Dock, March 10–11, 2011. The deadline for abstracts is Friday, Jan. 7, 2011 (<http://research.ncl.ac.uk/bnrg/home.htm>). Lastly, the joint meeting of the SBNS and the British Stereotactic and Functional Neurosurgery Group will be hosted in Bristol, England, in April 2011.

Japan

Fumio Yamaguchi, MD, PhD

The Phase III trial of 5-aminolevulinic acid intraoperative photodiagnosis for malignant glioma will start at the beginning of 2011. Since 5-ALA has been used by obtaining ethical committee approval in each institute, the approval of this agent and method by the Ministry of Health, Labor and Welfare will accelerate the spread of this technique in Japan.

The revision to the organ transplant law went into effect on July 17. It allows transplants in the absence of prior written consent from a donor if the family's approval is obtained. It also eliminates the age restriction and allows children under 15 who are brain dead to donate their organs. Since this enforcement of law, the number of transplants has been increasing in Japan. This change in the law will gradually decrease the numbers of patients who are going abroad to obtain organs.

Upcoming neurosurgery and neuro-oncology meetings in Japan include the following:

- 15th Annual Meeting of the Japanese Congress for Brain Tumor Surgery
Oct. 1–3, 2010, Osaka, Japan; <http://bts2010.umin.ne.jp>
- 69th Annual Meeting of the Japan Neurosurgical Society
Oct. 27–29, 2010, Fukuoka, Japan; <http://jns2010.umin.ne.jp>
- 28th Annual Meeting of The Japan Society for Neuro-Oncology
Nov. 28–30, 2010, Karuizawa, Japan; <http://jsno28.umin.jp>
- 34th Annual Meeting of Japan Society for CNS Computed Imaging
Feb. 4–5, 2011, Yonago, Japan
- 21st Annual Meeting of the Japan Society for Hypothalamic and Pituitary Tumors
March 11–12, 2011, Akihabara, Japan
- The 31th Annual Meeting of the Japanese Congress of Neurological Surgeons
May 6–8, 2011, Yokohama, Japan; <http://www.jcns2011.jp/>

China

Yonggang Wang, MD, PhD

There are two important neurosurgical meetings in China that are organized by the neurosurgical branches of the Chinese Medical Doctor Association and Chinese Medical Association.

The 5th National Congress of the Chinese Doctor Association-Neurosurgeon branch was held from June 18 to 20 in Chengdu. It is also a joint meeting of the 4th Academic Congress of International Chinese Neurosurgical Sciences, the Academic Conference of Sino-Japanese Neurosurgery, and the Continuing Medical Education Conference of the World Federation of Neurosurgical Societies. Some famous neurosurgeons, such as Peter Black, MD, and Albert Rhoton, MD, were invited to give lectures at this meeting, which was attended by more than 3,000 Chinese neurosurgical scholars from some 40 countries. The topics included not only all the clinical fields, but also basic research and nursing. During the meeting, attendees exchanged their experiences in neurosurgery.

The 2010 National Neuro-Oncology meeting, held in Nanjing from May 21 to 24, focused on "The Gateway to Future Treatment in Neuro-Oncology." Both Susan M. Chang, MD, from the University of California, San Francisco, and W. K. Alfred Yung, MD, from MD Anderson Cancer Center, attended and gave excellent lectures. Dr. Yung introduced recent advances in neuro-oncology practice, especially in the chemotherapy of malignant glioma. Dr. Chang introduced the clinical trials of brain tumors.

The 3rd (Tiantan) International Symposium of Skullbase and Brainstem Tumors was held in Beijing from Sept. 3 to 6. Takeshi

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Kawase, MD, gave a presentation entitled, “A Novel Combination Treatment with Skull Base Surgery and Carbon Ion Radiosurgery for Clival Chordomas Invading the Brain Stem.” Junting Zhang, MD, from Beijing Tiantan Hospital introduced his 18 years of experience in the surgical treatment of petroclival meningiomas. Under the leadership of Zhongcheng Wang, MD, and Dr. Zhang, the hospital’s department of neurosurgery, which is the biggest neurosurgical center in Asia, already has treated 471 patients with petroclival meningiomas since 1992. That is the largest number of reported surgical treatments of petroclival meningiomas in the world to date.

Another large meeting, the 9th National Congress of Neurosurgery, will be held from Sept. 10 to 12 in the city of Jinan. We believe that with our conjunctcombined efforts, neurosurgery in China will continue to progress.

Additional meetings in China include:

- 9th National Congress of Neurosurgery
Sept. 10–12, 2010, Jinan, China
- Tiantan Neuro-Endoscopy Symposium
Oct. 15–17, 2010, Beijing, China
- 2010 Annual Meeting of the Chinese Neuromodulation Society (The First Asian Congress of Neuromodulation)
Oct. 30–31, 2010, Beijing, China; <http://www.neuromodulation.com/page/china>
- Tiantan Spinal Surgery Forum
Oct. 29–31, 2010, Beijing, China
- 5th Shanghai International Neurosurgery Conference
Nov. 12–14, 2010, Shanghai, China

Australia

Charlie Teo, MD

Brain tumor awareness, treatment and research continue to expand exponentially throughout Australia. A brief summary of each of these areas is provided below.

Awareness

Brain tumor awareness week, a regular fixture on the charity calendar, was held from May 2 to 8 and included walks, dinners, lunches, theater performances and school lectures. The week culminated in the Cure for Life Annual Gala Ball; the theme “Party for Life” clearly resonated with many, as tickets were sold out eight weeks before the event and a total of AU\$500,000 (\$474,000) was raised, while many more people were made aware of the devastating nature of brain tumors.

In May the Australian government issued a statement recommending limitation on children’s use of mobile phones. This action followed publication of the Interphone study, which explored whether radiofrequency exposure from mobile phones is associated with cancer risk.

Research

Australian research into brain cancer has been transformed completely in the past few years. Tumor collection networks such as AGOG (Australian Genomics and Clinical Outcomes in Glioma)

Young Neurosurgeons Report

Anthony D’Ambrosio, MD

The AANS/CNS Section on Tumors is proud to sponsor the Young Neurosurgeons Reception at the 2010 CNS meeting in San Francisco, California. The reception will take place from 6–7 p.m. in Nob Hill Rooms A and B at the San Francisco Marriott Marquis, which is the headquarters hotel.

This informal event is an outstanding opportunity for young brain tumor surgeons, both in training and in practice, to meet with many of the leaders in brain tumor surgery and research.

are enabling a larger number of sites to collect quality preserved tumor tissue and plasma from patients diagnosed with glioma, and a comprehensive epidemiological survey is being conducted in parallel. The key to this network is the priority to collect accurate clinical data. Together with the tissue, this infrastructure is helping to promote future novel research. In the past year, laboratories dedicated to neuro-oncology—the Cure Life Neuro-Oncology Group led by Kerrie McDonald, the Oncogenic Signalling Laboratory led by Terry Johns, and the Leukemia Foundation Laboratory at Queensland Institute of Medical Research led by Bryan Day and Brett Stringer—have pooled resources and expertise in their respective molecular biology fields, namely predictive biomarker development and understanding of tumor migration, epidermal growth factor receptor signaling and therapy development, and glioma stem cell neural culture and gliosphere development.

Research highlights from Australia for 2010 include Dr. Johns’ research on the interactions between and among heterogeneous tumor cells within a single neoplasm. This research showed that a small population of cells expressing a given phenotype (for example, EGFRvIII) had the potential to drive accelerated growth of the entire tumor mass, thereby maintaining tumor cell heterogeneity. This research was published online in the *Genes and Development* journal in August 2010 and surpassed the journal’s existing records for generating the most “hits.” A collaboration between Dr. McDonald and Roger Reddel, director of the Children’s Medical Research Institute, found in a small proportion of patients an association between the presence of a mechanism for alternative lengthening of telomeres and tumors that also harbored mutations in the IDH1 gene. The presence of both was representative of the proneural subtypes of glioblastoma: less aggressive, associated with longer survival but nonresponsive to the current chemotherapy modalities. This study was published in August in the *Journal of Neuropathology and Experimental Neurology*.

Synergies between the laboratory and clinical trials also are improving. Both Dr. Johns and Dr. McDonald are working

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together to provide biomarker analysis to the Cabaret trial, funded by Roche, consisting of bevacuzimab with or without carboplatin. Dr. McDonald's laboratory is now providing testing for MGMT methylation and will expand molecular testing in other areas. Novel imaging coupled with biomarker analysis for a better accurate prediction of tumor progression is also being explored.

Treatment

Since the introduction in 2005 by the European Organisation for Research and Treatment of Cancer, EORTC, of an adjuvant temozolomide protocol for newly diagnosed patients with gliomas, Australian centers have developed a more focused approach to management of patients with newly diagnosed gliomas, and local specialist neuro-oncology groups have formed throughout Australia. These groups allow collaborative research at both the clinical and translational levels and have also led to improved standard of care for all patients. This collaborative approach is

now translating into improved survivals, with some units seeing a 20-month median survival for ECOG 0-1 GBM patients.

Australia continues to feature in many international trials for glioma management. The Clinical Oncology Group for Neuro-oncology has been established to help coordinate Australian glioma research nationally. Australia has made significant contributions to the studies of AvaGlio (standard therapy +/- bevacuzimab), Centric (standard therapy +/- Cilengitide) and the EORTC study for newly diagnosed elderly patients with GBM, and at a number of centers we have just opened CATNON, an EORTC study for nondeleted anaplastic astrocytomas. Australia was also a major contributor to the EOTRC low-grade glioma study, which recently closed to recruitment.

In addition to international collaborations, we have initiated Cabaret, a local multicenter trial comparing bevacuzimab with bevacuzimab plus carboplatin for first relapse of GBM, which is being coordinated through the Cooperative Trials Group for Neuro-Oncology. This study will be associated with a unique neurocognitive evaluation component and a translational laboratory study.

AANS/CNS Section on Tumors Executive Committee 2009–2011

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