CHAIRMAN’S ADDRESS

by

William F. Chandler, M.D.

The Joint Section was very pleased to present the first grant award for support of neuro-oncology research. A grant of $15,000 was made possible through the generosity of the National Brain Tumor Foundation. This funding was awarded to Jeffrey Bruce from Columbia University. The award was presented to Dr. Bruce at a plenary session at the recent AANS Annual Meeting in Minneapolis. This will be an annual event at the AANS meeting. Applications for the 1997 award will be available later this year.

The second Neuro-oncology Satellite Symposium will be held in conjunction with the CNS Annual Meeting in Montreal. It will begin at 1 PM on Thursday, October 3rd and will end at 5 PM on Friday, October 4th. Ray Sawaya has put together a diversified and stimulating scientific program. There will be a number of outstanding invited speakers addressing topics of epidemiology, radiobiology, regulation of cell growth, molecular therapy and prognosis. In addition, there will be a number of papers presented in open scientific sessions and posters available for review and discussion during an informal dinner on Thursday evening. Please plan to attend and to encourage your colleagues and collaborators in other fields to join you. Registration will be available along with your general CNS meeting registration or separately during the CNS meeting.

Bill Couldwell has organized an excellent program for the Wednesday afternoon Joint Section session at the upcoming CNS Annual Meeting. The topic will be “Medical and Surgical Management of Pituitary Tumors.” The invited speakers will include Ed Laws, Ed Oldfield, and Rudy Fahlbusch. In addition to this program, the Preuss Resident, Mahaley Clinical, and Young Investigator Award papers will be presented, along with several other selected papers.

We continue to look for new individuals to become involved in the Joint Section. I would encourage you to contact me if you have a particular interest or new ideas.
Minutes of the Joint Section on Tumors  
Executive Council Meeting  
April 26, 1996  
Minneapolis, Minnesota

The Executive Council of the Joint Section on Tumors was called to order at 1:35 p.m. by Chairman Bill Chandler. Also present were Mark Bernstein, Mitch Berger, Keith Black, Peter Black, Bill Couldwell, Roberta Glick, Ed Laws, Kevin Lillehei, Andrew Kaye, Paul Kornblith, Tim Mapstone, Jack Rock, Mark Rosenblum, Jim Rutka, Ray Sawaya, and David Thomas.

Minutes:
The minutes of the Executive Council Meeting held at the CNS Meeting in San Francisco, California were accepted as written.

Treasurer’s Report:
The financial report was given by Dr. Bernstein. The Section continues to be in stable financial condition with total assets of $141,546.00 as of December 31, 1995. The net revenue for 1995 was $34,140.00. The proposed budget for 1996 was briefly discussed vis à vis significant revenues and expenses anticipated associated with the Satellite Symposium at the CNS Meeting in Montreal in October.

Awards Committee:
The Award recipients were reviewed. The winner of the Mahaley Award is Dr. William Hitselberger, who will be introduced by Dr. Bernstein. The winner of the Preuss Award is Dr. Margaret Wallenfiedman, who will be introduced by Dr. Laws. The Young Investigator Award goes to Dr. Liliana Goumnerova, who will be introduced by Dr. Chandler. The NBTF Research Grant was won by Dr. Jeffrey Bruce out of about 20 applications; he will be introduced by Dr. Berger. The Farber Award was awarded to Dr. Greg Cairnercross and Dr. Peter Black will introduce him. It was also decided that if continued efforts to obtain reimbursement from the Preuss Foundation prove futile, the name of this Award will be changed to The Joint Tumor Section Resident Research Award.

Bylaws Committee:
Dr. Rock reported that he examined the last revision of the Bylaws in March 1994 and has not identified any Bylaws presently requiring revision.

Education:
Dr. Alexander could not attend, but he had submitted a letter outlining his efforts to develop a CD ROM devoted to the brain tumor research literature. If any members have any suggestions in this area, they are invited to send them to Dr. Alexander.

International Committee:
Mr. Thomas reminded the group of the European Congress of Neuro-oncology October 6-9, 1996 in Wurzburg, Germany. He also reiterated that the 12th International Congress on Brain Tumor Research and Therapy will be held in Oxford, England September 20-23, 1997 which is just before the CNS Meeting that year in New Orleans.

Membership Committee:
Dr. Lillehei presented the list of four new Active Members, one new International Member, and one International Member who resigned. Currently, we have 505 Active Members, 51 International, 7 Resident, 14 Associate/retired, 3 Honorary, and 57 Adjunct. He spoke to the problem of poor representation from residents and has composed a letter that will be sent to all Neurosurgery Residency Program Chairmen encouraging them to inform their residents of the excellent opportunities associated with membership in the Joint Section on Tumors. Various other ideas were suggested such as starting a “mentorship” program in which residents interested in neuro-oncology might be connected to an accomplished member of the Section. We also discussed the possibility of a special forum for residents at the Satellite Symposia and agreed that residents should definitely be offered a discount on the registration for such Symposia.

Membership Services:
Dr. Rutka has produced a list of benefits of membership in the Joint Section. Members are asked to think of further potential benefits we can generate to make membership in our Section more attractive to prospective members.

Program Committee:
Dr. Mapstone spoke briefly to the Joint Tumor Section Session at this Meeting on Wednesday on the topic of Pediatric Brain Tumors. Dr. Couldwell outlined the Session at the CNS Meeting in Montreal in October 1996 on Pituitary Tumors. Dr. Berger will be responsible for the Session at the AANS Meeting in April 1997, and Dr. Keith Black for the Session at the CNS Meeting in 1997.

Research Committee:
Dr. Glick prepared a detailed research report outlining the poor success rate...
High levels of speech recognition have recently been observed in a patient with neurofibromatosis 2 (NF 2) treated with a multichannel auditory brainstem implant (ABI). The ABI is designed to be placed in the lateral recess of the fourth ventricle during translabyrinthine surgery to remove a vestibular schwannoma in patients with NF2. The present ABI contains 8 active electrodes intended to stimulate the cochlear nucleus (CN) complex. Although the 8 electrodes are not aligned with a tonotopic axis in the CN, most patients receive different pitch perceptions associated with stimulation of individual electrodes. One patient, who perceives a large pitch range across her electrodes, is able to recognize 60% of the words in simple sentences using only the sound through her ABI. She can converse in a limited manner over the telephone. This case provides the proof-by-existence that electrical stimulation of selective neural populations at the level of the CN can produce patterns of auditory information to the brain that are sufficient for word recognition.

Of a total of 17 patients with the multichannel ABI, 8 receive some (10% to 20% correct) recognition of words in sentences with only the sound from the implant, and all 16 stimulatable patients receive useful sound sensations that improve their ability to communicate when combined with lipreading.

Previous studies of antisense oligonucleotides (AONs) to insulin-like growth factor-1 (IGF-1) or its receptor (IGF-1R) have employed viral vectors to transfet tumor cells. These transfected cells, in turn, are capable of activating the immune system of immunocompetent syngeneic rodents to recognize both transfected and nontransfected tumor cells. As a consequence, animals immunized in this manner exhibit complete tumor regression and prolonged survival when challenged with either peripherally or centrally implanted brain tumor cells.

In the present study, we have examined the effects of directly administering antisense to IGF-1R in vivo or ex vivo on C6 tumor growth in BDIX rats without the use of a viral vector. AONs administered in this fashion have recently been shown to be transported into the cytoplasm and nucleus of cells to suppress gene expression and protein synthesis by blocking the translation of its complimentary mRNA. We engineered an IGF-1R AON of 21 nucleotides in length, and a randomized nonsense oligonucleotide (NON) identical in length and nucleotide composition to the IGF-1RAON as a control. In their vivo study, C6 peripheral gliomas were established in the flank of 9 BDIX rats. Ten days after tumor implantation, the animals

(con't on page 7)
The initial goal is to make a CD ROM that could be used by neurosurgical and neuro-oncological investigators interested in the basic clinical and scientific literature concerning brain tumors. Ideally, entire articles, including all of the graphics, images and charts, would be included on the CD ROM ("the Brain Tumor Literature CD") in a very accessible format. In addition, hypertext links between references would allow for one to easily move around the article (i.e., from text to linked graphics), from one article to another, and possibly to specific places in other articles. All this would be combined with an easy navigation system that would keep a map of one's progress and allow one to easily back track and take other avenues. I think that this kind of knowledge structure with all of the important articles in their entirety easily cross-linked with hypertext would be a very valuable learning tool. It might set an example that could be utilized not only by neurosurgeons interested in brain tumors, but also be extended to other medical fields as well as other scientific interests in general.

We will look forward to hearing more about this in the future.

Also new from NCI: if at first you don’t succeed in winning an investigator-initiated RO1 grant, the NCI will give you a chance to try again in a more accelerated manner. Under an experimental program, grants within ten points of the payline will be eligible for the Accelerated Executive Review Program. In the first round of such appeals, 13 grant applications went before the committee and eight won funding. Good Luck!

For those applying for FIRST and Career Awards from NIH, a new “just in time” streamlined application procedure that omits the detailed budget and other form items and makes the application process a bit more tolerable is now in place.

Other good news: NIH Director Harold Varmus has announced plans to disband the Recombinant DNA Advisory Committee (RAC) and the FDA will handle all new gene therapy proposals. This will enable investigators to obtain approval for gene therapy in half the time.

Below is a list of funding sources relevant to neuro-oncology research. Some of these were previously described in the Newsletter and so we have included only the phone numbers to which inquiries can be made.

1. US Dept. Health and Human Services- Public Health Service: NIH- NINDS (301-496-9248)
2. American Cancer Society (404-329-7612)
3. AANS: Young Investigator Award (708-692-9500)
4. Cancer Research Foundation of America (703-836-4412)
5. National Science Foundation (703-306-1130)
6. Fogarty International Center (301-496-1653)
7. Sloan Basic Research Fellowships (for Neuroscience Research) (212-649-1649)
8. American Institute for Cancer Research (202-328-7744)
9. Small Business Innovative Research (SBIR)- NIH The last source on the list is a new way to fund research by collaborating with a corporate entity (e.g., gene company) and forming a small business endeavor. Funding is at the 75% level.

The Research Committee is interested in input from the Section members. Please feel free to forward your suggestions and ideas to Roberta P. Glick at 312-633-6328 (Phone) or 312-633-6494 (FAX).
MEDICAL AND SURGICAL MANAGEMENT OF PITUITARY TUMORS

Moderators: William Couldwell and William Chandler

Learning Objective: After attending this seminar, the participant will have an improved understanding of the medical and surgical management of pituitary tumors. The participant will be able to describe the management of recurrent adenoma, acromegaly, and Cushing’s disease and will also be able to explain avenues for future therapy of pituitary tumors. The participant also will have an increased understanding of the current research that is ongoing in the field of neuro-oncology.

2:30-2:50PM The Recurrent Adenoma
Edward R. Laws, Jr.

2:50-3:10PM Contemporary Surgical Management of Cushing’s Disease
Edward Oldfield

3:10-3:30PM Avenues for Future Therapy
Rudolph Fahlbusch

3:30-4:00PM COFFEE BREAK/EXHIBITS

4:00-5:30PM OPEN SCIENTIFIC SESSION
Moderators: Mark Bernstein and Mark Rosenblum
The Second Tumor Satellite Symposium of the Joint Section on Tumors is scheduled to take place in conjunction with the Congress of Neurological Surgeons’ Meeting in Montreal, Canada on October 3rd and 4th, 1996. The conference chairmen are Drs. Bill Chandler and Peter Black, and the scientific program chairman is Dr. Raymond Sawaya.

Four general topics will be covered. These include: epidemiology, radiobiology, cell cycle control, and molecular therapy. In addition, there will be three open scientific sessions, during which competitively selected abstracts will be presented.

The design of this symposium was developed with input from Dr. Mitch Berger, who successfully managed the first tumor symposium. A strong participation by the neurosurgical community was evident and resulted in the exposure of advanced research in brain tumors. A similar experience is anticipated this time, and in addition, extra efforts are being made to encourage the participation of all related disciplines.

For any questions concerning this program, please contact Dr. Raymond Sawaya at phone: (713) 792-2400; FAX: (713) 794-4950. e-mail: raymond_sawaya@qksurg.mda.uth.edu.

National Brain Tumor Foundation Patient and Health Professional Conference in Southern California

The National Brain Tumor Foundation and the San Diego Gamma Knife Center/Scripps Hospital are the co-sponsors of a one-day conference for brain tumor patients and their families on November 16, 1996 in La Jolla, CA. This exciting Southern California conference will feature leading healthcare professionals and workshops focusing on the latest in treatments, coping, and caregiving. For more information please call the National Brain Tumor Foundation at 1-800-934-CURE.

Young Investigator Award

William Chandler, MD, Chairman of the AANS/CNS Joint Section on Tumors, presented the Spring 1996 Young Investigator Award, funded by the American Brain Tumor Association, to Liliana Goumnerova, MD. Dr. Goumnerova of The Children’s Hospital in Boston was recognized for her outstanding research on the role of neurotrophins in both cerebellar development and medulloblastoma.

The Fall 1996 Young Investigator Award will be presented at the CNS Meeting in Montreal.

American Brain Tumor Association 1996-1998 Research Fellowships

The American Brain Tumor Association proudly announces the recipients of its coveted Research Fellowship Awards for 1996-1998. Based upon the advice of ABTA’S distinguished Scientific Advisory Council, these $50,000 fellowships have been awarded to:

Fellow: Robert Friedlander, MD
Sponsor: Junying Yuan, PHD
Institution: Massachusetts General Hospital, Boston
Research: Cytokine Gene Transfer for Immunotherapy of Malignant Gliomas

Fellow: Linda Liao, MD
Sponsor: Keith Black, MD
Institution: University of California, Los Angeles
Research: Relation of Proteases and Their Inhibitors to Brain Tumor Invasion and Migration

Fellow: James Markert, MD
Sponsor: Richard Whitley, MD
Institution: University of Alabama at Birmingham
Research: Mutant Herpes Simplex Virus as a Vector for Cytokine Gene Therapy of Glioma

Fellow: James Olson, MD, PHD
Sponsor: Stephen Tapscott, MD, PHD
Institution: Fred Hutchinson Cancer Research Center, Seattle
Research: Identification of Neural Differentiation Defects in Medulloblastoma

Fellow: John Park, MD, PHD
Sponsor: Charles Stiles, PHD
Institution: Dana Farber Cancer Institute, Boston
Research: Role of PDGF Autocrine Loops in the Pathogenesis of Malignant Astrocytomas

National Brain Tumor Foundation Supports Neuro-oncology Award

Jeffrey Bruce, MD, of Columbia University is this year’s recipient of the National Brain Tumor Foundation’s Neuro-oncology Award. This prestigious $15,000 award was given to Dr. Bruce for his research on “Novel Intratumoral Drug Delivery System for Treatment of Brain Tumors in a Rat Glioma Model.”
ANNOUNCEMENT
SUMMER INTERNSHIP ON THE
EPIDEMIOLOGY OF BRAIN TUMORS
FUNDED BY THE
CENTRAL BRAIN TUMOR REGISTRY OF THE U.S.

OBJECTIVE: To further research on the epidemiology of brain tumors.

BUDGET: $5,000.00.

SCOPE OF WORK: Epidemiologic proposals involving a focused analysis of existing data or pilot projects to test new hypotheses are eligible for funding under the direction of a senior investigator. Projects must be based in the U.S.

ELIGIBILITY: Any student currently enrolled in a graduate level degree program in epidemiology at a U.S. accredited institution.

APPLICATION: The required application form must be completed in full and be accompanied by the student’s curriculum vitae and research proposal and the sponsor’s name, letter of support and curriculum vitae.

Applications may be obtained by calling the CBTRUS office at (312) 579-0021.

SPONSOR: This epidemiologic work must be conducted under the direction of a sponsoring epidemiologist or neuroscience researcher. Preference will be given to students working with senior investigators who have publications and grants in brain tumor research.

DEADLINE: Applications must be received by January 15, 1997. Send applications to: The Central Brain Tumor Registry of the U.S. 3333 West 47th Street. Chicago, IL 60632

AWARD PERIOD: June 1 through August 30, 1997, or to coincide with summer internship schedule at particular institution at which research is to be conducted.

FINAL REPORT: October 1, 1997.

Preuss Award (con’t from page 3)
were randomly assigned to receive either intratumoral injections of IGF-1RAON (n=5) or intratumoral injections of NON (n=4) injections of AON and NON were given at a concentration of 100 µM in a 50 µl volume on Days 11, 13, and 15 after tumor implantation. Average tumor volumes over Days 11 to 25 showed that the IGF-1RAON-treated rats had significantly reduced tumor volumes compared to NON controls (ANOVA, p<0.05). Prior to treatment, tumor volumes for AON and NON animals were 1529±229 and 1775±319 cu mm (mean±SEM), respectively. At 4 days after the last injection, tumor volume in IGF-1R AON-treated animals was reduced to 66% of their size before treatment. In contrast, tumors in NON-treated animals increased to 150%. In the ex vivo study, 9 BDIX rats with established peripheral C6 gliomas in the right flank were treated with a single dose of 10 x 105 irradiated C6 cells which were preincubated in either IGF-1R AON or NON and injected into the contralateral tumor-free flank. Prior to treatment, tumor sizes in the AON- and NON-treated animals were 2425±727 and 2090±575 cu mm, respectively. One week after treatment, tumors in AON-immunized animals decreased to 67% of their pre-treatment size while tumors in NON-treated animals increased to 130%. A single treatment with IGF-1RAON preincubated cells, therefore, yielded a significantly reduced tumor burden compared to NON-treated controls (ANOVA, p<0.05).

These data suggest that direct injections of IGF-1R AON or the injection of tumor cells modified ex vivo with IGF-1R AON may be clinically useful as either a vaccine or an immunological therapy for CNS glioma without the use of viral vectors for transfection.
Minutes (con’t from page 2)
on new RO1 grant applications (13.1%) and the fact that hospital
to the funding for research will decrease as federal funding of hospitals decreases. Fortunately, the NIH is enjoying a
projected 5.7% increase in its budget. She suggested compiling available research funding agencies and an
updated list of brain tumor clinical protocols and listing both of these on
the Internet. The issue of research opportunities for residents was also
discussed and it was noted that Drs. Warnick and Raffel are sending a
questionnaire to all residents to try to get a handle on the magnitude of the
challenge.

Task Forces:

1. Guidelines
Dr. Rock reported on a meeting in Chicago that he recently attended
representing the Joint Section on Tumors, where it was indicated that
each Section will really be responsible for generating and pursuing topics for
guideline development. He updated the group on the progress with the
low-grade glioma guidelines on which he and Dr. Bernstein have been
working on behalf of the Joint Tumor Section. At a meeting held the day
before, chaired by Ed Shaw, the first draft of the guidelines on low-grade
glioma was discussed. It was concluded, based on a critical literature
review, that there existed only treatment options: to biopsy or not, to
resect or not, and to radiate or not were all acceptable options for a
patient who has an imaging diagnosis of a low-grade glioma and is neuro-
logically intact, with seizures only. The next draft will be available
probably by the end of June and will be circulated to the Membership of the
Executive Council for approval before joint publication in the neurosurgery,
neurology, and radiation oncology literature. At this point, Dr. Florin
joined the meeting and apprised the
group of the new structure of the
Assessment Committee which is an
“umbrella” for three other committees:
the Outcomes Committee chaired by
Dr. R. Toselli, the Guidelines Committee chaired by Dr. B. Walters, and
and the Devices, Drugs, and Procedures Committee chaired by Dr. A. Fried-
man. Dr. Florin exorted the Section to be proactive in outcomes and guide-
lines development.

2. Multi-disciplinary Neuro-oncology
Effort
Dr. Rosenblum gave an update. Dr. Chandler has corresponded with the
various subspecialty societies and has been given the names of representa-
tives by all groups except ASTRO. It was suggested that representatives
from all constituent groups get together for a meeting sometime
within the next year. There will be a
meeting of the Joint Tumor Section
officers, Dr. Rosenblum, and Dr. Cairncross the next day to further
discuss this initiative.

CNS Satellite Symposium:
Dr. Sawaya updated the group on plans for the Satellite Symposium to
be held immediately following the
CNS Meeting in Montreal in October, 1996. A planning meeting of the
organizing committee had been held the day before. The topics of discus-
sion are Epidemiology and Prognosis, Radiobiology, Regulation of Cell
Growth, and Molecular Therapy. Dr. Sawaya has secured all but one invited
speaker and has allotted time for 21
platform papers to be selected from submitted abstracts. The abstract form
will be sent out and the proceedings
will be published in the Journal of
Neuro-Oncology. Dr. Sawaya was thanked for his excellent efforts.

AACR Satellite Symposium:
Dr. Peter Black spoke of the first ever Brain Tumor Satellite Symposium in
conjunction with the AACR to be held June 7-9, 1997. The AACR will be
responsible for most of the financial
arrangements, but the scientific
program committee will consist of
Drs. Black, Chandler, Piepmeier, and
Rosenblum from the Joint Tumor Section.

Journal of Neuro-Oncology:
The Journal has agreed to publish in an upcoming issue an advertisement
describing the Mission Statement and benefits to members of the Joint
Section on Tumors.

Central Brain Tumor Registry:
Dr. Berger has communicated to Ms.
Kruchko that Joint Tumor Section
members would be interested in accessing the CBTR’s database and
contributing in a more formal way to the collection and management of the
data obtained by the CBTR.

The Meeting was adjourned at 2:55
p.m.

Respectfully submitted,

Mark Bernstein MD, FRCSC
Secretary-Treasurer
Joint Section on Tumors, AANS and CNS

Fellowships (con’t from page 6)

Fellow: David Raben, MD
Sponsor: David Curiel, MD
Institution: University of Alabama at
Birmingham
Research: Genetic Radio-Isotope
Targeting Strategies for Brain Tumors

Fellowship applications for July, 1997
may be obtained from the ABATA
office:
Phone: 847-827-9910
Fax: 847-827-9918
E-mail: ABATA@aol.com
The deadline for completed applica-
tions is January 6, 1997.

8
APPLICATION FOR MEMBERSHIP
Joint Section on Tumors
of
The American Association of Neurological Surgeons
and
Congress of Neurological Surgeons

Name: ____________________________________________________________________________________________

Home Address: _____________________________________________________________________________________

Home Phone Number: ________________________________________________________________________________

Business Address: ___________________________________________________________________________________

Business Phone Number: _____________________________________________________________________________

Fax Number: _______________________________________________________________________________________

I wish to apply for:
❑ Active Membership  ❑ International Membership  ❑ Resident Membership

*If applying for Resident Membership, please have chairman forward confirmation of your resident status.

Program: _______________________________________________________________________________________

Chairman: _______________________________________________________________________________________

Year of anticipated completion: ____________________________________________________________

Are you a Member of:

The American Association of Neurological Surgeons?  ❑ Yes  ❑ No
❑ Active    ❑ Active (Foreign)    ❑ Active (Provisional)    ❑ Associate
❑ Candidate  ❑ Corresponding  ❑ Honorary  ❑ Lifetime

Congress of Neurological Surgeons?  ❑ Yes  ❑ No
❑ Active  ❑ Honorary  ❑ International  ❑ Resident  ❑ Senior

(continued on reverse side)
Please list any membership in other Neurosurgical Societies: _________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________

Other Societies: _____________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________

Are you currently involved in Active Brain Tumor Research?

Clinical:  ☐ Yes  ☐ No

Basic:  ☐ Yes  ☐ No

Special areas of interest: ______________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________

Suggestions on Section activities that would be of benefit to you: ________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________

Please send your complete application and curriculum vitae to:

Kevin O. Lillehei, MD
University of Colorado Health Center
4200 East 9th Avenue
Campus #C-307
Denver, CO 80262
TUMOR SATELLITE SYMPOSIUM
OCTOBER 3-4, 1996

THURSDAY, OCTOBER 3, 1996

EPIDEMIOLOGY & PROGNOSIS

Moderators: Raymond Sawaya, MD & William Chandler, MD
1:00 - 3:00 p.m. Welcome: William Chandler, MD
1:05 - 1:15 p.m. Introduction: Raymond Sawaya, MD
1:15 - 1:45 p.m. Susan Preston-Martin, PhD
1:45 - 2:10 p.m. Stuart Grossman, MD
2:10 - 2:35 p.m. Douglas Arnold, MD
2:35 - 3:00 p.m. Janet M. Bruner, MD
3:00 - 3:30 p.m. BREAK
Moderators: Peter Black, MD & James Rutka, MD
3:30 - 6:00 p.m. Free Papers Session
6:30 - 8:30 p.m. Dinner with Poster Review

FRIDAY, OCTOBER 4, 1996

RADIOBIOLOGY

7:00 - 7:30 a.m. Continental Breakfast
7:30 - 4:30 p.m. Poster Review
Moderators: Mark Bernstein, MD & Mitch Berger, MD
7:30 - 7:45 a.m. Introduction: Mark Bernstein, MD
7:45 - 8:15 a.m. Kie-Kian Ang, MD, PhD
8:15 - 8:45 a.m. Jay Loeffler, MD
8:45 -10:00 a.m. Free Papers Session
10:00-10:30 a.m. BREAK

REGULATION OF CELL GROWTH

Moderators: Victor Levin, MD & Timothy Mapstone, MD
10:30 -11:00 a.m. Albert Won, MD
11:00-11:30 a.m. David Malkin, MD
11:30 -12:00 p.m. David Beach, PhD
12:00 - 1:00 p.m. LUNCH

MOLECULAR THERAPY

Moderators: Henry Brem, MD & Walter Hall, MD
1:00 - 1:15 p.m. Introduction: Al Yung, MD
1:15 - 1:40 p.m. Dao Nguyen, MD
1:40 - 2:05 p.m. Leaf Huang, PhD
2:05 - 2:30 p.m. Edward H. Oldfield, MD
2:30 - 3:00 p.m. BREAK
Moderators: Joseph Piepmeier, MD & Ronald Warnick, MD
3:00 - 4:30 p.m. Free Papers Session

ADJOURN

UPCOMING MEETINGS

European Congress of Neuro-oncology
October 6-9, 1996
Wurzburg, Germany
Contact: The Congress Secretariat
IMEDEX, Bruissteningel 360, P.O. Box 3283,
5203 DG’s-Hertogenbosch, The Netherlands,
Phone +31-73.6.42.92.85, Fax +31-73.6.41.47.66

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