

Faculty & Topics
Marine Biological Laboratory
Woods Hole, MA

Andersen, Bruce/Jim Galbraith
Idaho Neurological Institute/NIH
Squid Lab

Awad, Issam
Northwestern University
“Scientific Method: History and Philosophy”

Benowitz, Larry
Harvard University
“Axonal Guidance and Regeneration”

Bernstein, Kerry
IBM Corporation
“The Evolution of Our Neuroelectronic Species”

Brem, Henry
Johns Hopkins University
“Brain Tumor Therapy”

Connolly, E. Sander
Columbia University
“Neuroinflammation/Adhesion Molecules”

Corkin, Suzanne
Massachusetts Institute of Technology
“Is Emotional Memory Special”

Dempsey, Robert
University of Wisconsin
“Putting Scientific Thoughts Together:
What a Reviewer looks for in a Grant or Manuscript”

D’Amore, Patricia
Schepens Eye Institute
“Angiogenesis and Neoplasia”

Edgerton, V. Reggie
UCLA Medical Center
“Activity Dependent Mechanisms that Enhance Sensorimotor
Function Following Spinal Cord Injury”

Friedlander, Robert
Harvard Medical School
“Programmed Cell Death an “Strategies with NIH Grants”

Gunel, Murat
Yale University
“Signaling Pathways and Neural Cell Fate”

Haglund, Michael
Duke University
“Optical Imaging of Epileptiform Activity:
From Brain Slices to the Operating Room”

Hochberg, Leigh
Harvard Medical School
Intracortically-based Brain-Computer
Interfaces: Frontiers in Neuroscience and Functional
Neurosurgery

Kang, Lawler
“Finding Your Life’s Work”

Kondziolka, Douglas
University of Pittsburgh
“Raising Questions and Answering them:
Changing the Practice of Clinical Neurosurgery”

Macklis, Jeffrey
Harvard University Medical School
“Neural Precursors and Stem Cells:
Basic and Translational Science”

Madsen, Joseph
Harvard Medical School
“Neuroengineering: Pulses and Waves”

Martuza, Robert—Keynote Speaker
Harvard Medical School
“Development of Oncolytic Viral Vectors”

Nightingale, Roger
Duke University Medical Center
“Catastrophic Cervical Spine Injury Mechanisms”

Oldfield, Edward
National Institutes of Health
“Convection Delivery to the Brain”

Pomeroy, Scott
Harvard University Medical School
“Genomics and Proteomics in Clinical Neuroscience”

Reese, Thomas
National Institutes of Health
“History of the Marine Biological Laboratory”

Riggins, Gregory
Johns Hopkins University
“Molecular Genetics of Brain Tumors”

Rutka, James
University of Toronto
“Developmental Signaling Pathways and Brain Tumors”

Schwob, Jim
Tufts University
“Neural Regeneration and the Olfactory System”

Silver, Jerry
Case Western Reserve University
“Glial Barriers and Scarring”

Simard, Marc
University of Maryland
“Cerebrovascular Smooth Muscle Physiology”

Walters, Beverly
Brown University
“An Introduction to Evidence-Based Neurosurgery”



dedicated faculty. A requirement for faculty participation remains — that the individual be an active and accomplished scientist, speaking on topics he/she actively investigates, and that he/she be an effective speaker. Only those who are highly rated by the neurosurgical trainees would be invited again. Many would dazzle and inspire casting truly unforgettable lectures or discussions. The days would be filled with lectures, unhurried, with plenty of time for discussion. There would be long blocks of time for reading in the library, or for creative and vivid discussions with beer, wine and snacks late into the night. Friendships would be forged among attendees, and research ideas and even an occasional scholarly career would be hatched. All attendees stay at the dorm at Swope Hall, where the legendary cafeteria cafeteria is like no other, and the views from each simple bedroom (many shared by two residents) as memorable.

Because of untimely illness in 1998, Dr. Gross asked to step down from the Directorship of the RUNN Course, which he had grown to love so much. The opportunity of change of leadership allowed a re-examination and re-commitment to the Mission and core values of the RUNN Course. The AANS and CNS asked the Society of Neurological Surgeons (SNS) to assume sponsorship and oversight of the course. Established in 1920 the SNS is known in neurosurgical lore as the “Senior Society” or organization of North American Residency Program Directors. The SNS would insure Program Directors’ continued commitment to this unique educational offering, and ensure residents’ continued participation.

In 1999, the leadership of the RUNN Course was entrusted to Issam A. Awad. Dr. Awad broadened the goals of the RUNN Course to educate neurosurgical residents in formulating hypothesis driven experiments, establishing laboratories and writing grants. To this end, several neurosurgeons who headed successful basic science laboratories were added to the faculty. The Society owes a debt of gratitude to Cathy Awad who administered the Course during Dr. Awad’s tenure. Cathy coordinated everything from “L” shirts to accommodations to finances.



It is here that Henry Schmidek cast his RUNN Course, and lobbied other residency program directors to send their trainees once a year. By the mid-1980’s it was an established offering for two weeks each fall, immersing neurosurgery residents from New Orleans to Saint Louis, from Minnesota to Maryland, and from San Francisco to New York City. The faculty included scientists from the MBL, demonstrating microscopy and dissection and scientists from New England universities who would drive to MBL for one or two days to participate in RUNN. There would also be neurosurgery’s rising academic stars as role models, and wiser icons telling their tales of successes and challenges in the laboratory.

There was nothing like it in neurosurgical education, and there still is not. The founding mission of the RUNN Course remains relevant today, and its culture and milieu remain as appealing. This crown jewel of American neurosurgical education was adopted in the late 1980’s by the American Association of Neurological Surgeons (AANS) and later by the Joint Committee on Education of the AANS and the Congress of Neurological Surgeons (CNS). This endorsement and administrative oversight by organized neurosurgery heralded an era of expansion and uninterrupted success under the Directorship of Charles Hodge, of Syracuse, New York, with his lovely wife Cathy shepherding the Course as its coordinator. In the mid 1990’s Dr. Hodge became co-Director, passing the helm of Directorship to Cordell Gross, of Burlington, Vermont. Linda Gross served as Course Coordinator.

During this period, Charlie and Cordell cultivated a core of devoted faculty from the MBL, Syracuse, Vermont, Harvard, Brown, the National Institutes of Health (NIH), and other institutions who would participate on a regular basis as faculty. Many still receive the highest ratings from RUNN Course attendees, and return again. Other RUNN attendees eventually became academic stars and later leaders in neurosurgery and have become

call of nature.

Martha’s Vineyard sound and to collect and maintain more than 200 species of marine life. There are 230,000 square feet of research space and a splendid library with an extraordinary repository of books and journals and incredible electronic connectivity to everything biological. It is here that the giant squid axon was (and continues to be) so closely studied unfolding the splendid story of molecular mechanisms of neural function. There are incredible microscopy facilities, numerous amphitheaters and teaching facilities, a quintessential scientific community in true life and work, and a magnificent setting for creativity and scholarly productivity. And there is Swope Hall, a simple dormitory sleepily straddling a quaint harbor, with a friendly staff that knows how to host students and scholars. It is all in Woods Hole, that lovely little spot and ideal gateway, along the magnificent coast of Cape Cod and nearby islands. With miles of bicycle trails and nearby ferries, the only competition to diligent scholarship at Woods Hole is the inspiring call of nature.

A N N U A L R E P O R T

Stimulating
Science
in a
Unique Setting

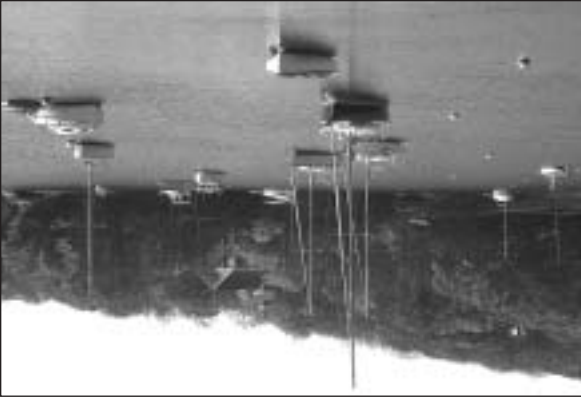
RESEARCH UPDATE
IN NEUROSCIENCE
FOR NEUROSURGEONS
(RUNN)
OCTOBER 23–30, 2005

Sponsored by:
THE SOCIETY OF NEUROLOGICAL SURGEONS

Course Directors:
ALLAN H. FRIEDMAN, M.D.
ROBERT M. FRIEDLANDER, M.D.

Co-Directors:
BRUCE ANDERSEN, ISSAM A. AWAD, HENRY BREM,
ROBERT J. DEMPSEY, CHARLES HODGE, JR.,
AND EDWARD OLDFIELD

Course Coordinator:
KAREN KOENIG



As so many neuroscientists from New England, Dr. Schmidek was very familiar with the Marine Biological Laboratory (MBL) at Woods Hole, Massachusetts. Established in 1888 as a non-profit institution devoted to research and education in basic biology, the MBL has been called “the uniquely national center for biology in this country” (Lewis Thomas, The Lives of a Cell). Scientists and students throughout the world come to MBL to conduct research, teach, study and collaborate. They often use the diverse and abundant organisms found in surrounding waters as model systems. Here research ships leave everyday to study the pristine waters around

Historical Background
and Setting

The RUNN course was the brainchild of Henry Schmidek, formerly of Harvard University and the University of Vermont. The course was conceived in response to the anticipated expansion of neurosciences, which he predicted in the early 1980’s. The course was to combat what he perceived as potential illiteracy in basic neurobiology that he feared would weaken the specialty of neurosurgery. Dr. Schmidek’s RUNN Course has been instrumental in setting the course of academic neurosurgeons.

As so many neuroscientists from New England, Dr. Schmidek was very familiar with the Marine Biological Laboratory (MBL) at Woods Hole, Massachusetts. Established in 1888 as a non-profit institution devoted to research and education in basic biology, the MBL has been called “the uniquely national center for biology in this country” (Lewis Thomas, The Lives of a Cell). Scientists and students throughout the world come to MBL to conduct research, teach, study and collaborate. They often use the diverse and abundant organisms found in surrounding waters as model systems. Here research ships leave everyday to study the pristine waters around

Mission Statement

RUNN Course Leadership

In 2004, Dr. Awad passed the baton of leadership to Allan H. Friedman (Duke Universtiy) and Robert M. Friedlander (Harvard) as the new Directors of the Course. The Co-Directors of the Course are Issam A. Awad (Northwestern), Bruce Andersen (Idaho Neurological Institute), Henry Brem (Johns Hopkins), Robert J. Dempsey (University of Wisconsin) and Charles Hodge, Jr. (SUNY at Syracuse). Dr. Andersen works closely with Jim Gailbraith and Paul Gallant (both of the National Institutes of Health) on the squid lab and microscopy workshop. Course Coordinator, Karen Koenig, works throughout the year to insure RUNN is executed flawlessly, managing the organization, administration and accounting of the Course.

The 2005 RUNN Course Curriculum: Tradition and Innovation

The founding mission and core values of the RUNN Course remained unchanged for the 2004 course, and the SNS Executive Committee (representing North American Residency Program Directors) rearticulated its commitment to the course and its leadership.

In response to recent course evaluations and discussions with Program Directors and residents, the course was shortened in 1999 from two weeks to one week with travel days on adjacent weekends. This format was maintained in 2005. The one and one half hour length of individual lectures remained unchanged and six evening sessions were held. Curriculum content was reshaped to include lectures covering the spectrum of molecular, cellular and systems neuroscience. Lectures covered topics on molecular genetics, signaling and receptors, stem cells, cell death, regeneration, oncogenesis, glial barriers, vascular tone and phenotype, cognitive information science, circuit modeling, and higher cortical function. Approximately one third of the lectures were given by practicing neurosurgeons with active funded laboratories. There were tours of the MBL laboratories and the very popular microscopy seminar. This year the hands-on dissection of squid giant axon was cancelled due to inclement weather. A lecture on grantsmanship was given in its place. There were discussions on academic career development, grantsmanship, history and philosophy of science and the scientific method, and history of the MBL. And there were the traditional opening get-acquainted reception and Course Orientation, and the farewell Clambake and certificate ceremony.

The 2005 Special Lecture, “Development of Oncolytic Viral Vectors,” was delivered by Robert Martuza, M.D., Higgins Professor of Neurosurgery, Chief Neurosurgical Service, Harvard University Medical Center. Dr. Martuza not only presented an outstanding lecture on, oncolytic viral vectors, but charted his own development as a neurosurgeon scientist.

The collegial atmosphere at Swope Hall remained unchanged, as were the memorable late night sessions with snacks, beer and wine and the very late night sessions at Captain Kidd’s where residents discussed everything from research topics and career paths, to residency training, to NFL football. Each attendee received a complementary copy of either Fundamentals of Neuroscience, edited by Zigmond, Bloom, Landis, Roberts, and Squire (Academic Press 1999), or the Third Edition of Neuroscience, Edited by Purves, Augustine, Fitzpatrick, Hall, LaMantia, McNamara and Williams. These books are magnificent references to topics covered in the lectures, and an outstanding source for future study.



A Splendid Cast of Faculty

The faculty (see list) represented a virtual who’s who of American neuroscience. There were 30 faculty and 8 directors, representing an extraordinary student/faculty ratio of 2/1 (excluding course co-directors who did not lecture). Attendees were mesmerized by the dynamic speakers and post lecture discussions were lively and probing. The residents discussed personal choices in research commitments and career direction with the invited speakers. Many faculty members had participated in the RUNN Course for several years, and all promised to come again if invited. The Course evaluations included countless constructive suggestions for next year. Individual faculty mean evaluation scores ranged 1.2 to 2.2 (scale 1-5, 1 best), with more than two-thirds scoring better than 2.0 (good), and none averaging a score of 3.0 (average) or worse.

An Enthusiastic Cast of Attendees

There were 76 attendees from Programs (see list) representing programs throughout the United States, Canada, Puerto Rico and Portugal. The reshaped course is ideal for young attending neurosurgeons just embarking on their academic career. Our goal is to attract one neurosurgeon from each neurosurgical program in North America. We will work hard until we achieve representation of at least one participant from each North American Program.

Our participants continue to be enthusiastic. It is exciting to see the participants swept up in the lectures and spontaneously confronting the lecturers with insightful questions. If this group is representative of neurosurgical residents, the future of neurosurgery looks very bright.

Course Report by Ciaran Powers, M.D., Ph.D., Resident Attendee

Neurosurgical Resident
Duke University Hospital

For the 21st year, the Research Update in Neuroscience for Neurosurgeons (RUNN) course took place in the historic Marine Biological Laboratory (MBL) in beautiful Cape Cod. The course brought well-known researchers from a broad range of fields in the neurosciences together with over seventy eager residents and neurosurgeons in practice for a week of lectures and conversation. As many of the resident reports of the past have articulated, the RUNN course was once again an intellectually-inspiring escape from the rigors of patient care during our training. Personally, it provided me a chance to indulge the inquisitive drive that got me interested in research to begin with as a college student.

The course directors, Drs. Allan Friedman and Robert Friedlander, brought an engaging group of speakers from across the country to speak on their research. Topics ranged from the molecular signaling pathways during development to cellular responses to spinal cord injury to the biomechanics of neck injury. Freed from the traditional expectations of a formal scientific lecture, the speakers were able to introduce novel and exciting ideas about how we think about solving neurosurgical problems. For example, Dr. Marc Simard introduced the idea of heparinizing patients following aneurysmal SAH to prevent vasospasm and Dr. Joseph Madsen articulated the problems with our current paradigm of hydrocephalus and slit ventricle syndrome. Speakers were also able to describe the cutting edge of advances in technology and our ability to treat patients with crippling neurologic impairments. Such was the case of Dr. Leigh Hochberg, who presented his most recent experiences with cortically-based brain-machine interfaces.

Perhaps more important than the scientific content of the lectures was the lessons learned by these physician-scientists regarding the actual balance of research and clinical responsibilities. At the start of each lecture we heard how these scientists succeeded in creating the situations that allowed them to have both a successful clinical practice and productive research endeavor. There were as many ways of achieving this balance as there were speakers. Dr. Friedlander described the importance of serendipity in finding a productive situation in which to start a research career. Dr. Michael Haglund stressed the usefulness of incorporating a research project into the unique opportunities of a surgeon, such as being able to perform experiments in the operating room. And Dr. Robert Dempsey encouraged the participants not to give up at the first rejected grant, but to doggedly pursue our ideas.

Important opportunities for questioning also occurred outside of the lectures. Insofar as all the course participants were sequestered away at the MBL, we were able to engage in academic conversations over lunch, dinner or an evening glass of wine. In addition, residents from different programs were able to interact with each other and compare our experiences. It was very interesting to see the different ways in which different hospitals manages similar neurosurgical problems, such as surgical versus endovascular management of ruptured aneurysms. Many of us residents had not seen each other since we were interviewing for the Match and it was great to see the familiar faces.

Between lectures and meals, there was still time to explore the MBL and its surrounds. The library, just down the street from Swope Hall, was accessible 24 hours a day and provided a quiet place for reading and writing. There were several great routes for running along the coast or up past the lighthouse. In addition, many residents took advantage of Wood Hole’s only open bar in the off season, Captain Kidd’s, for evening entertainment.

Generous Educational Grants

We acknowledge generous sponsorship level grants from   and  and generous educational grants in support of the 2005 RUNN Course by MM MARATHON MEDICAL INC. These grants paid for the purchase of textbooks for each participant and subsidized faculty travel and honoraria costs.

Toward RUNN 2006 and Beyond!

We have finalized space contracts with the MBL for the years 2006 through 2009. RUNN 2006 will take place from October 21-28, 2006. The SNS and the Course Co-Directors and Coordinator are committed to maintaining the best of the RUNN Course, while continuing to strive to enhance curriculum content and value to each registrant. We continue to call on Residency Program Directors to support this unique gem of North American Neurosurgical Education, by providing their residents the opportunity of exposure to, and update on the best of neurobiology. We hope that future courses will also attract fellows and young faculty at formative states of their academic careers, and to practicing neurosurgeons who want to get reacquainted with the future of Neurosurgery!



RUNN Web Site
<http://www.societyns.org>

Future Course Dates

Marine Biology Laboratory
Woods Hole, MA

- October 21–28, 2006
- October 20–27, 2007
- October 18–25, 2008
- October 17–24, 2009

RUNN Course Attendees
October 23–30, 2005

Participant	Institution
Almeida, Cesar A,	University of Calgary
Amin, Devin V.	University of Pittsburgh
Armin, Sean	Loma Linda University
Bagan, Brad	Rush University, Chicago
Bamber, Norman	Loyla University Chicago
Banasiak, Magdalena	University of South Florida
Belknap, Thomas	Brown University
Birknes, John	Jefferson
Blaskiewicz, Donald	SUNY Upstate Medical Center
Bollo, Robert	NYU Medical Center
Brooks, Nathaniel	University of Wisconsin
Bryant, Tanya	Medical College of South Carolina
Caridi, John	University of Maryland
Coitero, Domingos	Portugal (Attending)
Cowan, Jr., John	University of Michigan
Dalfino, John	Albany Medical College
Das, Sunit	Northwestern
Delgado, Mariel	Ohio State University
Dell, Stephen S.	California (Attending)
DiLuna, Michael L.	Yale University
Douds, G. Logan	Penn State
Ducruet, Andrew	Columbia University
Eddleman, Christopher	Northwestern
Elbabaa, Samer K.	University of North Carolina
Fakhoury, Faris	University of Illinois–Chicago
Feliciano-Valls, Caleb	University of Puerto Rico
Fox, W. Christopher	University of Michigan
Galvan, George	University of Missouri–Columbia
Gonzalez-Cruz, Jorge	Louisiana State, Shreveport
Hanna, Amgad	Thomas Jefferson University Hospital
Harmon, Daniel	University of Alabama
Hirschl, Robert	Ohio State University
Jamoonaa, Amrith	New York Medical College
Jankowitz, Brian	University of Pittsburgh
Kouloumberis, Pelagia E.	University of Illinois - Chicago
Lee, Ian	Henry Ford
Leveque, Jean-Christophe (JC)	University of Michigan
Liang, Danny	University of Maryland
Litvack, Zachary	Oregon State Univ. OHSU
Madhok, Ricky	University of Pittsburgh
Massengale, Justin	Stanford University
Mathur, Vin	Temple University Philadelphia
McCanna, Shannon	Indiana University
Missios, Symeon	Darhmouth–Hitchcock
Moise, Gaetan	Columbia University
Ocal, Eylem	Yale University
Okpaku, Aubrey	Albert Einstein
O’Neil, Brent	Allegheny General Hospital
Ong, Joseph	University of Pittsburgh
Pandalai, Sudha	University of Rochester
Papanastassiou, Alexander	Harvard/Brigham & Womens
Parikh, Samir	University of Cincinnati
Parr, Ann	University of Toronto
Patel, Nimesh	Rush University, Chicago
Patrick, Todd	Mayo, Rochester
Powers, Alexander	Wake Forest University
Powers, Ciaran	Duke University
Rajpal, Sharad	Univ. of Wisconsin
Sabit, Aria	UMDNJ
Sachs, Adam	University of Ottawa
Schwartz, Paul	UMDNJ
Seinfeld, Joshua	University of Colorado
Shanks, Todd	Louisiana State University
Song, Debbie K.	University of Michigan
Tawk, Rabih	University of Buffalo
Thurmond, James	UMDNJ
Tran, Hoan	University of New Mexico
Tsung, Andrew	University of Illinois
Turner, Scott	University of Minnesota
Tuttle, Jonathan	Medical College of Georgia
Uittenbogaard, Kyle	University of Minnesota
Utter, P. Andrew	Mayo, Rochester
Visioni, Agostino	University of Vermont
Weeks, Adrienne	University of Toronto
Weimar, James	University of TN
Weinstein, Jason	Oregon State University OHSU