

Moving Along

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Crossroads in Funding Research

In this issue we requested well-funded scientists in the US and Europe, as well as top NINDS program officers, to reflect on the status of research funding in the US and Europe. We believe their thoughtful comments and suggestions will be of use to you.

- The Editors

The Direction of Funding in US Clinical Research

—Demetrius Maraganore, MD, Mayo Clinic College of Medicine, Rochester, NY, USA

Clinical research has let our patients down. Despite making major strides in understanding the pathogenesis of Movement Disorders, and in particular Parkinson's disease, we have failed to translate this knowledge into disease modifying therapies. Contributing to the problem, National Institute of Health (NIH) funding is at a low point. As a result, only grants that are methodologically superb are receiving fundable scores. But this is often at the expense of innovation and risk. Therefore, most of the research that is being funded will not benefit our patients. There are some private foundations that have accepted

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Changing Scene of National and EU Funding in Europe

—Wolfgang H. Oertel, MD, Philipps University Marburg, Department of Neurology, Marlies Dorlöchter, PT-DLR, Bonn, Germany

In 2006, 25 countries constitute the European Union (EU). In addition, several other countries have an associated status, such as Israel and Switzerland. In most of the member states, national funding agencies and research and health ministries provide support for basic and clinical neuroscience. The overall success rate of an application, for example, in Germany and the UK is 10 – 30% slightly lower than, for example, in Austria or Sweden (30-40%).

In most of the national grant agencies, the basic principle of funding is bottom- up -

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Funding Opportunities at the NIH

—Katrina Gwinn-Hardy, MD, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, USA

—Diane Murphy, PhD, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, USA

Research on Movement Disorders is a primary mission of the National Institute of Neurological Disorders and Stroke (NINDS) and thus, NINDS provides many resources to assist and encourage the scientific community to work in this field. For those studying Parkinson's disease (PD) for example, the Parkinson's Web (www.ninds.nih.gov/funding/research/parkinsonsweb) provides quick links to PD funding opportunities, policy, events and relevant PD research tools.

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Money makes the world go round! We all know that this is also true in research. Therefore, three cover stories of this Spring/Summer issue of *Moving Along*, deal with different aspects of research funding in the US and Europe. Although many researchers, in Movement Disorders as well as in other disciplines, are concerned about major political developments that may threaten the total level of funding for research, both basic and clinically oriented, the cover stories of this issue show that the major funding agencies are trying to develop new and intelligent strategies to make the best from limited resources. The European Commission, for example, uses a “top-down” approach to steer national health-related research by issuing specific calls for proposals, but those programs are developed with major input from scientists and lay groups from all over Europe allowing for a “bottom-up” process to identify the most urgent and promising research areas.

A more “directive” approach also becomes visible in the NIH’s effort to promote the use of NIH-funded public resources, including biomaterial banks (e.g. DNA or antibodies) or data banks as a component of NIH proposals. The cover story by Katrina Gwinn-Hardy and Diane Murphy provides many interesting web links that may be useful to the readership.

Creating synergies and directing research to areas of major need is of course an important aspect of research policy. On the other hand, it should be kept in mind that the creativity that really generates scientific progress is probably not found in funding agencies or national or supranational organizations, but in the labs and in the clinics. Therefore, any research funding policy should make sure to allow for the unexpected to happen – and to be funded!

This issue’s scientific controversy features a lively debate on whether rotenone can be used as a model for Parkinson’s disease. Two renown researchers in this area, Dr. Hirsch from Paris, France, and Dr. Greenamyre from Pittsburgh, PA, USA, discuss in a scholarly manner if the protein aggregation induced by rotenone is selective for alpha-synuclein and if this model is reliable, both relevant issues for using rotenone as a model of Parkinson’s disease.



Irene Litvan, MD



Thomas Gasser, MD

On another note, registration for the 10th International Congress of Parkinson’s Disease and Movement Disorders, October 28–November 2, in Kyoto, Japan is well underway. Held at the Kyoto International Conference Hall, this year’s International Congress is already shaping up to be one of the premier meetings of its kind complete with new Meet the Expert sessions and Teaching Courses. We strongly encourage you to participate in this unique opportunity to gain a global perspective through scientific presentations offered by experts from all over the world.

As we embark upon this election year for the MDS International Executive Committee, the MDS-Asian and Oceanian Section and the MDS-European Section’s leadership, voting ballots will be distributed both by postal mail to the MDS membership and at the MDS exhibit booth at the International Congress in Kyoto to members only. Please take a moment to vote to ensure that our Society continues down the path of providing the opportunities and resources to broaden the knowledge about Movement Disorders.

LETTERS TO THE EDITORS

Your Comments and Questions Are Always Welcome

Editorial Policy

As part of its democratic commitment, MDS welcomes the input of all its members about the features and articles that appear in this newsletter. Have a comment or question? Each issue will include your responses in the “Letters to the Editor” section. All materials submitted become the property of MDS.

Address your communications to:
 Editor: *Moving Along*
 The *Movement* Disorder Society
 555 East Wells Street, Suite 1100
 Milwaukee, WI 53202-3823 USA
 Tel: +1 414-276-2145
 Fax: +1 414-276-3349
 E-mail: info@movementdisorders.org

The election process for the MDS International Executive Committee (IEC) is currently underway for the 2007-2008 term. The process will continue through to the formal election and installation of the newly-elected IEC members at the 2006 Annual Business Meeting, which will be held during the 10th International Congress of Parkinson's Disease and Movement Disorders, October 28-November 2, in Kyoto, Japan.

There are a number of steps in the election process. First, the 2005-2006 Nominating Committee was appointed. Dr. Werner Poewe, the Chairman of the Nominating Committee, appointed Drs. Luiz Augusto Andrade, Robert Burke, Mark Hallett, Shu-Leong Ho, Eldad Melamed, C. Warren Olanow and Eduardo Tolosa as its members. The Committee proceeded to review in detail the qualifications of a list of suggested candidates for President-Elect, Secretary-Elect and Treasurer-Elect, and the five open positions on the International Executive Committee. A number of criteria were considered in the selection of candidates, including geographic diversity, special expertise and knowledge, active participation and previous service in the Society, career experience, and leadership and management skills. A preliminary slate of candidates was then presented to the current MDS Officers for ratification.

The next step in the process was to issue a general Call for Nominations from the MDS membership. In July 2006, each member was presented with the opportunity to review the proposed slate of candidates and to submit nominations for any additional individuals to stand election. Any further nominations received will be, as prescribed by the Society's Bylaws, accompanied by a minimum of twenty-five letters of support from current MDS members.

The third step involves the compilation of the Nominating Committee slate and general membership nominations to form the final ballot. The ballot includes biographical information and a statement of goals for each candidate.

The election process concludes with the formal voting period that will begin in late summer 2006 and continue through to the time of the International Congress this fall. MDS members have two opportunities to register their vote: prior to the International Congress by regular mail post of the ballot form to the MDS membership, and during the 10th International Congress in Kyoto in the days leading up to the Annual Business Meeting. Absen-

tee ballots will be closed prior to the Annual Business Meeting. For those members attending the International Congress in Kyoto, the MDS exhibit stand will be equipped with ballots and a ballot box. Ballots will be accepted at the MDS exhibit stand until close of business on Monday, October 30. The results of the election will be announced during the Annual Business Meeting on Tuesday, October 31, from 5:00 p.m.-6:00 p.m.



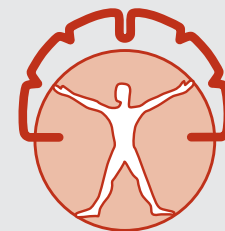
Just as the International Executive Committee leadership is selected through an established democratic process, so is the leadership at the regional section levels. Nominating Committees representing the Asian and Oceanian Section (MDS-AOS) and the European Section (MDS-ES) have also completed their work. Each has produced a slate of eligible candidates from the Society's membership representative of their respective regions to stand election for the 2007-2008 term.

The mechanism used by the regional sections to present the preliminary slate of candidates, to obtain additional nominations from the general membership in those regions, and finally, the development of the final slate and the voting process follow the same process as the international MDS election. Individuals who have been proposed for MDS international office are generally not proposed for regional section positions to encourage as wide a representation of the membership in executive decision making as possible.

The results of the MDS-AOS and the MDS-ES elections will also be announced during the Annual Business Meeting in Kyoto on October 31.

These electoral processes will ensure that MDS continues to be guided by a diverse assembly of individuals prepared to devote their time and efforts working for the betterment of the Society and the medical speciality of Movement Disorders. I hope you will participate in the 2006 election process at both the international and regional levels. Your participation in this important process is vital for the selection of a strong, effective and innovative leadership which will contribute to the ongoing development and achievement of MDS.

Andrew Lees, MD, FRCP
MDS President 2005-2006



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The *Movement* Disorder Society

International Secretariat

Caley A. Kleczka

Executive Director

555 East Wells Street, Suite 1100

Milwaukee, Wisconsin 53202-3823

USA

Tel: +1 414-276-2145

Fax: +1 414-276-3349

E-mail:

ckleczka@movementdisorders.org

Crossroads in Funding Research

Continued from cover...

The Direction of Funding in US Clinical Research, continued...

the risk of funding innovative research with translational value. But foundation grants provide limited funds for shorter periods of time and with less indirect support. They put small bets on many horses with poor odds of winning the race, rather than large bets on a few horses with the potential to make racing history.

So we might turn to industry for help. But Big Pharma has shied from the challenge of developing disease modifying therapies for even the most common of Movement Disorders, such as Parkinson's disease, because the market analysis is unfavorable. We are told that there are no more than a million US citizens with PD, that it costs a billion US dollars to make a new drug, and that the success rate is only 5%. "Don't call us, we'll call you."

What then can we as clinicians engaged in research do? Our goal should be to design studies that will provide proof of concept for disease modifying therapies. We need to force a major paradigm shift from susceptibility to outcomes. We need to lobby for funding mechanisms that embrace this new focus and we need to score grants particularly well when they are responsive. If only a few grants get funded, but they are of this type, we will nevertheless compile the evidence needed to compel Big Pharma to re-engage and we will succeed in the development of the disease modifying therapies that our patients desperately need.

Changing Scene of National and EU Funding in Europe, continued...

the applicant(s) defines the topic and submits a grant to any thematic research at any time. Single projects, local, regional and national networks and consortia are supported. The review process is more or less completely driven by the scientific community, although not necessarily free of bias. In contrast, national research and health ministries and especially the EU – now in the transition from the 6th to the 7th

European Frame Work Program (FP) – has a top-down funding philosophy: scientific, but also political or societal needs, influence the selection of priority areas in an attempt to steer national and European research developments. Likewise, a few large, national private foundations with a program on neuroscience (Welcome Trust; PD-Society UK; Ipsen Foundation, France; Hertie-Stiftung, VW-Stiftung, Germany) follow a top-down approach – in part related to the will of the sponsor.

With respect to Movement Disorders, the EU has in the past granted limited resources to the Consortium on Genetic Susceptibility in PD (GSPD – 5th FP) and to Research Networks for Parkinson's disease (EuroPa – 5th FP) and Multiple System Atrophy (E-MSA-SG – 5th FP), for EuroWilson (6th FP) and "Neurodegeneration" (Neurone) (6th FP) and substantial support for Integrated Projects on basic and clinical research in ataxia (EuroSCA) (6th FP) and Alzheimer's disease and parkinson syndromes (APOPIS) (6th FP). The 7th FP will hopefully increase funding for the neurosciences substantially. Recently, the ERA-Net project NEURON has started to survey the numerous different means of funding for neurosciences in Europe and will provide transparency and comparison of the funding situation for neuroscience in the different national member states and the EU as a whole.

Funding Opportunities at the NIH, continued...

All NINDS initiatives can be found at www.ninds.nih.gov/funding/funding_announcements/allcurrent.htm and the NIH guide, which publishes new initiatives weekly from all Institutes/Centers, can be searched at www.nih.gov/grants/guide/index.html.

As the NIH budget is constricting, grant applicants need to increasingly leverage existing infrastructure. An excellent way to do this is to utilize existing NIH funded public resources. At NINDS, these include

a DNA and Cell line repository for gene discovery in Parkinson's and other diseases (locus.umdj.edu/ninds) and the NeuroMab facility (www.neuromab.org), which generates monoclonal antibodies for research use in studies of the mammalian (including human) brain. Several resources for animal models exist including the NINDS/UCLA repository for PD mouse models, which allows the distribution of transgenic PD mouse models that are not commercially available, and GENSAT (Gene Expression Nervous System Atlas (www.gensat.org) which provides a public gene expression atlas of the mouse CNS based on bacterial artificial chromosomes.

NINDS staff have specialized expertise to assist grantees and can provide guidance on unique mechanisms for clinical (www.ninds.nih.gov/funding/research/clinical_research/index.htm) and translational research (www.ninds.nih.gov/funding/research/translational/index.htm). Guidance should be sought well in advance of submission to allow the best chance of success.

In Remembrance of Carlos Chouza

The *Movement Disorder Society* (MDS) is deeply saddened to announce the death of Professor Carlos Chouza from Montevideo, Uruguay.

A member of MDS since 1992, Professor Chouza was a pioneer in the Movement Disorders specialty in his country helping to found the Sociedad Latinoamericana de Movimientos Anormales (SOLAMA). He was also known for his seminal work on drug induced parkinsonism.

Throughout his 68 years of life, he became a well-known physician who was very active in promoting knowledge about and teaching of Movement Disorders in Uruguay and Latin America.

10th International Congress Announcements

Excitement continues to build as MDS prepares for the 10th International Congress of Parkinson's Disease and Movement Disorders. The 2006 offering of this highly anticipated gathering of delegates and faculty from around the world will take place in the beautiful city of Kyoto, Japan.

Dates

Be sure to mark the dates of the International Congress in your calendars- Saturday, October 28-Thursday, November 2, 2006.

Location

All scientific sessions of the Scientific Program will take place at the Kyoto International Conference Hall (KICH). The conference hall is located in a natural, outdoor setting at the foot of the evergreen Mount Hiei in Kyoto, Japan. Attendees can fly in to Kansai International Airport (KIX) in Osaka, Japan. To reach the convention center, it is approximately a 75-minute ride via Japan Rail's (JR) Haruka Limited Express from KIX, and then a 20-minute subway ride from JR Kyoto station in Kyoto. Attendees may also choose to fly in to Tokyo's Narita International or Osaka's Itami airports.

Abstracts

The Call for Abstracts for the 10th International Congress is now closed. We are pleased to have received an overwhelming number of abstract submissions this year- 1,380. All submitted abstracts will be reviewed for consideration and acceptance by the Congress Scientific Program Committee. All primary authors will be notified of their submission at the end of this summer. Poster instructions will be available on the Web site at this time as well.

Scientific Program

To view all faculty and Scientific Program session information, please visit the Web site to download a PDF file of the program at www.movementdisorders.org/congress/congress06/program.php. Please note that new to this year's program are Meet the Expert sessions and Teaching Courses.



Important Dates to Remember

August 15, 2006- Pre-Registration Early Deadline for individuals and groups

September 1, 2006- Pre-Registration Advance deadline for groups

September 15, 2006- Pre-Registration Advance deadline for individuals

September 30, 2006- Housing Deadline

Registration

To register for the 10th International Congress, visit www.movementdisorders.org/congress/congress06/.

To receive reduced fees, register early. The early pre-registration deadline for individuals and groups is August 15. Fees will increase by \$50 USD between August 15 and September 15 for Members, Non-Members and Non-Members applying for membership, and by \$25 USD for Junior Members and Allied Health professionals. The advance pre-registration group deadline is September 1. The advance pre-registration deadline for individuals is September 15. From September 15 and after, all individuals should register onsite.

Hotel Accommodations

MDS has reserved a number of rooms at multiple hotels in Kyoto, Japan. Please visit www.movementdisorders.org/congress/congress06/hotel.php, to reserve your hotel room. Full details, including hotel descriptions, location and distances to Kyoto International Conference Hall, can be found on this Web link.

Don't miss out on this year's International Congress- be sure to register now while registration fees are reduced! To access complete information regarding the 10th International Congress, including registration, hotel accommodations and the Scientific Program, visit the Web site at www.movementdisorders.org/congress/congress06/.

If you have any questions about the 10th International Congress of Parkinson's Disease and Movement Disorders in Kyoto, Japan, or if you are a non-member wishing to receive information, please contact the MDS International Secretariat by e-mail at congress@movementdisorders.org or visit the MDS Web site at www.movementdisorders.org.

As we complete this first year since the establishment of the Asian and Oceanian Section of The *Movement* Disorder Society (MDS-AOS), I am delighted to report upon the exciting initiatives currently underway.

2006 MDS-AOS Election

MDS-AOS will hold its first leadership election this year. Following the process established by our parent organization, the international MDS, the MDS-AOS 2006 Nominating Committee was designated by the AOS Officers. Members of the MDS-AOS Nominating Committee include Professors Yoshikuni Mizuno of Tokyo, Japan, Shu-Leong Ho of Hong Kong, People's Republic of China, and myself. As a result of our deliberations this past spring, we presented a slate of candidates to the AOS Officers for the positions of Chairman-Elect, Secretary-Elect, Treasurer-Elect and two open positions on the AOS Executive Committee. The slate of candidates, as ratified by the AOS Officers, was then presented to the Section Secretary.

In August 2006, under the guidance of the AOS Secretary, a general Call for Nominations was sent to the Section membership providing members in the region with an opportunity to review the proposed candidates for office and put forward, if wished, additional nominations for these positions. Please note that any further nominations will need to be accompanied by a minimum of twenty-five letters of support signed by current MDS-AOS members, as required by the Society's Bylaws.

Once all candidates have been identified, the next step in the Section's election process involves the development of the final ballot, which will include the AOS Nominating Committee's slate of candidates and any general membership nominations received. The ballot will be sent to the AOS membership early this coming fall. The final tally of ballots will be overseen by the Section Secretary and the results will be announced at the international MDS Annual Business Meeting on Tuesday, October 31, from 5:00 p.m.-6:00 p.m., during the Society's 10th International Congress of Parkinson's Disease and Movement Disorders, October 28-November 2, 2006, in Kyoto, Japan.

On behalf of the MDS-AOS Officers and Executive Committee, I encourage you to participate in this important process and to cast your ballot!

1st Asian and Oceanian Parkinson's Disease and Movement Disorders Congress (AOPMC)

On October 20-22, 2007, MDS-AOS and the National Neuroscience Institute (NNI) will organize the 1st AOPMC in Singapore at the Suntec Singapore International Convention and Exhibition Centre. Participants will include physicians,

researchers and other health care professionals from the Asian and Oceanic region.

The main congress will take place on October 21-22, 2007 and will consist of plenary sessions, video presentations, and research platform and poster sessions, with a focus on Parkinson's disease and Movement Disorders, from basic science to clinical practice. Pre-congress industry-supported kick-off seminars will be held the day preceding the congress, on October 20. On October 22, AOS will offer a series of educational courses.

The 1st AOPMC will be conducted in conjunction with the 6th International Symposium of the Asian and Pacific Parkinson's Association (APPA). The APPA will be organized by the Parkinson's Disease Society of Singapore and the NNI.

We expect that the 1st AOPMC will be very successful in creating awareness of the Asian and Oceanian Section within the region. MDS-AOS plans to organize future offerings of this meeting in the region once every two years.

For more information regarding the 1st Asian and Oceanian Parkinson's Disease and Movement Disorders Congress, please visit the MDS Web site at www.movementdisorders.org/aos/aopmc07.php or contact the Congress Secretariat directly at nni_secretariat@nni.com.sg.

Your AOS on the Web!

MDS-AOS now has a presence on the Internet! I warmly invite you to visit our new Web pages located at www.movementdisorders.org/regionalsections.shtml. We have included information about the Section leadership, upcoming meetings and other Section initiatives and activities. As new events are planned, information will immediately be made available on the AOS section of the MDS Web site, so please bookmark the location of the site and plan to visit often.

As the Asian and Oceanian Section of the MDS continues to evolve strategically and expand the scope of its programs and activities, I look forward to bringing news of these endeavours in future issues of *Moving Along*.

With best regards,



Philip Thompson
Chairman, MDS Asian and Oceanian Section



MDS-ES is thriving as our activities and outreach in Europe continues to expand.

Our relationship with the EFNS develops apace. Following Martin Horstink's retirement, from 1st January 2006 the current Chair of MDS-ES is henceforward Chair of the EFNS Scientist Panel for Movement Disorders, which has been renamed 'Parkinson's disease and other Movement Disorders; an EFNS/MDS-ES panel'. The European Guidelines on Parkinson's disease and dystonia, developed and supported by EFNS and MDS-ES, are now in press. We are supporting three EFNS Teaching Courses in Europe in 2006: Amos Korczyn, Vladimir Kostic and Anna Czlonkowska were the MDS-ES Invited Lecturers who visited Novosibirsk, Siberia in May 2006, Eduardo Tolosa, Thomas Gasser and Alberto Albanese will represent the Section in Bucharest, Romania in October, and Eduardo Tolosa will also represent us at the Teaching Course in Ekaterinburg, Russia in October. Ipsen has kindly provided financial support to assist us with the travel costs for our speakers. We have put together an excellent Movement Disorders program for the EFNS Congress in Glasgow, Scotland in September and I warmly encourage you to attend the Congress and support the work of the Section.

An important aim from the 2005 MDS Strategic Planning Meeting in Dublin was to reach out to our geriatric colleagues who see so many patients with Movement Disorders. Thus an exciting new collaboration has been started with the European Union Geriatric Medicine Society (EUGMS) whereby MDS-ES has agreed to sponsor a Movement Disorders symposium at the EUGMS Congress in Geneva, Switzerland in August 2006. EUGMS is keen to hear about new developments in restless legs syndrome, dementia and PD, and Drug Treatment of Parkinson's disease, with our faculty of Birgit Hoegl, Doug McMahon and David Burn.

Furthering our outreach to our junior colleagues, Joaquim Ferreira and Marie Vidailhet are collecting information on training programs available in Europe to help us decide if there is place for a Movement Disorders Winter School in Europe. I will be meeting the European Young Neurologists in Training during the EFNS Congress in Glasgow. I will be asking about potential interest in a Winter School and identi-

fying other ways in which MDS-ES can assist our young colleagues in Europe who wish to pursue a career in Movement Disorders.



Successful Dopamine Transporter Imaging in Neurological Practice workshops have taken place in Milan, April 2005 (Course Director Angelo Antonini), Leipzig, October 2005 (Course Director Johannes Schwarz) and Paris, January 2006 (Course Director Philippe Remy). Three additional workshops are scheduled for London, 22nd September 2006 (Directors Andrew Lees and Durval Costa), Copenhagen, 5th December 2006 (Director Lene Werdelin) and Barcelona, 23rd February 2007 (Director Eduardo Tolosa). Details of the upcoming workshops, for which enrollment is limited to 20 people, will be sent to all members in Europe.

Congratulations to Ivan Rektor and Irena Rektorova on the Movement Disorders sessions during the successful Danube Course, which took place in Brno, Czech Republic in April 2006, attracting over 650 neurologists from Central and Eastern Europe. Some 20 MDS members on the faculty contributed to a Movement Disorders Teaching Course, scientific sessions and Basal Ganglia Club.

The MDS-ES 2006 Elections, to select our Officers-Elect for 2007-2008 and five new ESEC members, will take place this summer and your active participation in the election will be much appreciated. Now that we have an annual International Congress, the European Section Annual General Meeting will henceforward take place at the MDS International Congress and the final voting for the 2006 elections will take place during the Kyoto International Congress.

Please do continue to support the Regional MDS activities and participate in our activities and debates for your input is very important to us!

Prof. Niall Quinn
Chairman

Register Now...

for the Dopamine Transporter Imaging in Neurological Practice Workshops!

For more information or to register online please visit www.movementdisorders.org

London, United Kingdom
September 22, 2006

Workshop Directors:
Andrew Lees, MD, FRCP
Durval Costa, MD, PhD, FRCR

Copenhagen, Denmark
December 5, 2006

Workshop Director:
Lene Werdelin, MD, PhD

Barcelona, Spain
February 23, 2007

Workshop Director:
Eduardo Tolosa, MD

Is Rotenone a Good Animal Model for Parkinson's Disease? YES

— J. Timothy Greenamyre, MD, PhD, Pittsburgh Institute for Neurodegenerative Diseases, Department of Neurology, Pittsburgh, PA, USA

The defect in mitochondrial complex I in Parkinson's disease (PD) is not restricted to substantia nigra; it is widespread and systemic, affecting other brain regions⁹ and tissues, such as platelets.^{7,11} Polymorphisms and mutations in mitochondrial DNA derived from non-neural tissues which encode complex I subunits have been strongly associated with PD,^{10,13} further substantiating a systemic complex I defect in PD. Because systemically administered rotenone easily and quickly enters all cells of the body, this complex I inhibitor (and pesticide) was used to mimic the systemic complex I defect of PD.^{3,12} When administered to rats as we have described, rotenone reproduces the following features of PD:

- Systemic complex I dysfunction
- Selective nigrostriatal degeneration
- Parkinsonian phenotype with bradykinesia and rigidity
- Lewy body formation
- Oxidative stress and damage
- Alpha-synuclein oligomerization and aggregation
- Nigral proteasome dysfunction
- Microglial activation
- Basal ganglia iron accumulation
- Reduced plasma testosterone
- L-DOPA responsiveness

Drs. Hirsch and Höglinger will raise two potential problems with the rotenone model. First, they question the selectivity of rotenone-induced pathology and they specifically discuss rotenone-induced striatal pathology. The rotenone dose-response is steep, and we do not dispute that when it is not administered, as we described, it can cause non-selective lesions. For example, Ferrante et al. used rotenone doses 3- to 9-fold higher than we did and they produced widespread pathology.⁵ In contrast, Zhu et al. followed our protocol exactly and found that only one of 13 rotenone-treated animals had any striatal cell loss.¹⁵ Moreover, if there were meaningful striatal damage, one would not expect a good L-DOPA response. Yet, Schmidt's lab has shown that L-DOPA reverses the motor deficits caused by chronic rotenone.¹ Similarly, even in *Drosophila* with rotenone-induced dopaminergic degeneration, motor deficits are reversed by L-DOPA.⁴ So, we do not believe anatomical selectivity is an issue in the rotenone model when our protocol is followed.

On the other hand, we do agree with Hirsch and Höglinger's second point that the rotenone model is variable (and difficult), and this can be frustrating. However, this variability raises mechanistic questions about – and presents research

opportunities to explore – inter-individual differences in xenobiotic metabolism, antioxidant defenses and mitochondrial function that are highly relevant to idiopathic PD. Despite this variability (and the claims of Hirsch and Höglinger), it is possible to explore mechanisms of degeneration and to successfully test experimental therapeutic approaches in the rotenone model.^{8,2,6,14}

Rotenone, as a pesticide, provides proof-of-concept that an environmental toxicant can cause a syndrome remarkably similar to PD (although we would not argue that rotenone, per se, is a cause of

PD). We now have an exciting opportunity to explore how such 'environmental' exposures interact with genes known to be involved in PD pathogenesis. For example, how does rotenone up-regulate alpha-synuclein and cause it to aggregate? And how does it lead to proteasomal impairment or to re-distribution of DJ-1 into mitochondria? By addressing these questions, we will gain a much clearer idea of what leads to degeneration in PD and how we might prevent it.

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“Rotenone, as a pesticide, provides proof-of-concept that an environmental toxicant can cause a syndrome remarkably similar to PD...”

CONTINUED ON PAGE 10

Is Rotenone a Good Animal Model for Parkinson's Disease? NO

— Etienne C. Hirsch, PhD, Hôpital de la Salpêtrière, Paris, France

— Günter U. Höglinger, MD, Philipps University, Marburg, Germany

Based on the reduced activity of complex I of the mitochondrial respiratory chain reported in the substantia nigra in Parkinson's disease, Greenamyre and co-workers have developed an experimental model of a parkinsonian syndrome by exposing rats to the pesticide rotenone, a lipophilic complex I inhibitor.¹ Whereas the model reproduces some of the characteristics of idiopathic Parkinson's disease (PD), it also displays some features of atypical parkinsonism.

In contrast to the selective reduction of complex I activity in the substantia nigra described in PD brains,² rotenone treatment produced a homogenous reduction of complex I activity throughout the brain.¹ Based on this, one would expect dopaminergic and non-dopaminergic neurons to degenerate after rotenone treatment. Several studies have reported cell counts of the dopaminergic neurons in the substantia nigra of rotenone-treated rats,^{3,4,5,6} two of which did not find significant cell loss.^{4,5} This indicates that rotenone affects dopaminergic neurons but unfortunately in a highly variable and, at present, unpredictable manner. Furthermore, four independent groups reported a degeneration of intrinsic striatal neurons, such as dopaminoceptive projection neurons and cholinergic interneurons, in rotenone-treated rats.^{3,7,4,5} These neurons are lost in some atypical parkinsonian syndromes, but not in PD.

Dr. Greenamyre will argue that rotenone-induced aggregation of alpha-synuclein is one of the most exciting aspects of the model and we agree on this. Yet, accumulation of other proteins has attracted little attention so far. Recently, we showed in rotenone-infused rats with severe lesion spherical deposits of alpha-synuclein in a few cells, but cells with abnormal cytoplasmic accumulations of tau immunoreactivity were even more numerous in the striatum. Abnormally high levels of tau immunoreactivity were found in the cytoplasm of neurons, oligodendrocytes and astrocytes. Ultrastructurally, tau-immunoreactive material consisted of straight 15 nm filaments decorated by antibodies against phosphorylated tau. Many tau⁺ cell bodies also stained positive for thioflavin S, nitrotyrosine and ubiquitin. Some cells with abnormal tau immunoreactivity contained activated caspase 3. This indicates that chronic respiratory chain dysfunction might trigger a form of neurodegeneration in which accumulation of hyperphosphorylated tau protein predominates over deposits of alpha-synuclein. Interestingly, other complex I inhibitors are likely to produce atypical parkinsonism with tau protein accumulation. Indeed, a tropical PSP-like tauopathy has been linked clinically and experimentally to the consumption of the

fruit and teas made from the leaves of the tropical plant *Annona muricata* that is rich in lipophilic complex I inhibitors.^{8,9,10,11,12}

"...but its characteristics are closer to atypical parkinsonism than to idiopathic PD."

In summary, we agree with Dr. Greenamyre that rotenone can be used to produce a parkinsonian syndrome in animals but its characteristics are closer to atypical parkinsonism than to idiopathic PD. Yet, one has to acknowledge that most groups using the model reported a great

variability among animals in terms of survival, degree of neuronal loss and symptoms making it difficult to evaluate the effect of experimental interventions using this model.

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MDS Implements Two Highly Successful Visiting Professorships in India and Tunisia

In January 2006, The Movement Disorder Society's Education Committee implemented Visiting Professorships in both India and Tunisia. These programs were welcomed with great enthusiasm and demonstrated the Society's continuous effort to reach out to the international community of Movement Disorder specialists.



Participants of the 2006 Visiting Professor Program in India

The All India Institute of Medical Societies (AIIMS) in Delhi, led by Prof. Madhuri Behari, was pleased to welcome Prof. Niall Quinn as a Visiting Professor. While in India, Prof. Quinn also visited Nizam's Institute of Medical Sciences in Hyderabad. During his stay, Prof. Quinn provided the audience of over 100 participants with lectures and video presentations of typical and atypical cases, including MSA, PSP and other tauopathies, and the medical and surgical management of Parkinson's disease, Huntington's disease and other choreas, dystonia tics and myoclonus. Dr. Behari was very appreciative of Prof. Quinn's participation, noting that "His years of vast experience, in-depth study of different types of Movement Disorders, very well taken video clips of common as well as uncommon Movement Disorders, and clear, concise and unambiguous delivery of

lectures went a long way in helping the participants understand the basic characteristics of several Movement Disorders and differentiate different types of parkinsonisms from one another, especially the subtle clinical features and management of these disorders."

MDS was also invited by the Tunisia National Institute of Neurology to provide two Visiting Professors. In Tunis (Tunisia), Profs. Olivier Rascol and Yoshikuni Mizuno were graciously hosted by Dr. Neziha Gouider-Khouja. Over the course of three days, lectures on the pathogenesis, genetics, clinical aspects and treatment management options for Parkinson's disease and other Movement Disorders were presented to approximately 80 participants from Tunisia, Morocco and Algeria. Several video cases were also discussed in

two lively sessions which were highly enjoyed by the audience. Profs. Mizuno and Rascol, as well as the audience, proclaimed the course a great success and extended gratitude to Dr. Gouider-Khouja for her efforts in preparing this course in Tunisia. This first and successful initiative of MDS in North Africa has been followed in Rabat, Mo-

rocco, a few months later (April 21-22), by a two-day teaching course on clinical trials in Parkinson's disease endorsed by MDS. This course, organized under the auspices of the Toulouse (France), Lisbon (Portugal), Fes and Rabat (Morocco) Universities were attended by a number of the Tunis participants who were trained by Profs. Rascol, Sampaio, Benomar, Messouak and others on ethical, methodological, scientific and practical aspects of randomized clinical trials in Parkinson's disease.

MDS is currently developing Visiting Professorships to be held in 2006 in China and Chile, and applications for the 2007 Visiting Professor Programs will soon be sought. If you are aware of potential hosts for a Visiting Professor or would like further information, please contact the International Secretariat at info@movementdisorders.org.

CONTROVERSY

Continued from page 8...

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Botulinum Toxin in Neurological Practice: Workshop Demonstrating the Treatment of Dystonia & Spasticity in Rome, Italy

The *Movement Disorder Society-European Section's* (MDS-ES) most recent Botulinum Toxins in Neurological Practice: Workshop Demonstrating the Treatment of Dystonia and Spasticity was held in Rome, Italy on January 27, 2006 and was supported by educational grants from Allergan, Merz Pharmaceuticals GmbH and Ipsen Neuromuscular Disorders.

This program was led by Workshop Directors Alfredo Berardelli and Carlo Colosimo and included: Giovanni Abbruzzese, Anna Rita Bentivoglio, Kailash Bhatia, Carla Cordivari, Roberto Eleopra and Ornella Rossetto as its faculty. In addition, Giovanni Fabbrini, Francesca Gilio and Marianna Iachetti participated in the organization of the afternoon practical sessions.

The forty-two participants indicated that after being involved in this activity they were better able to recognize and generate a differential diagnosis of dystonia, identify treatment alternatives for dystonia including oral medications, chemodeneration with botulinum toxin and surgical approaches, describe the



technique of injection, including the use of EMG and/or ES for muscle localization in specific dystonia subtypes and other selected Movement Disorders characterized by excessive muscle activity, localize and list the muscles typically injected for dystonia of the neck and eyes, and to describe a treatment plan that incorporates medical and chemodeneration for dystonia.

This successful workshop offered a critical overview of the clinical spectrum, pathophysiology and treatment of dystonia, with an emphasis on botulinum toxin therapy. During the morning didactic

session, faculty introduced participants to the basic pharmacology of botulinum toxin, dystonia treatment issues and botulinum toxin injection techniques. The use of botulinum toxin in other neurological conditions, including spasticity, was also discussed. During the afternoon session, faculty demonstrated assessment and botulinum toxin injection of patients with a variety of dystonia and spasticity subtypes.

Interest has already been noted for another Botulinum Toxins workshop to be held in the future.

MDS Offers RLS Workshop in Zürich, Switzerland

On March 17, 2006, a workshop focused on the "Clinical Features, Diagnosis, Pathophysiology and Treatment of Restless Legs Syndrome" was held in Zürich, Switzerland. Developed by the Society's Education Committee, under



the leadership of Course Director, Claudia Trenkwalder, this course offered participants an excellent opportunity to learn from and interact with world renowned experts on restless legs syndrome (RLS). This workshop was supported by educational grants from Boehringer Ingelheim International GmbH and F. Hoffman La Roche, Ltd.

Dr. Trenkwalder invited Claudio Bassetti, Wayne Hening, Birgit Högl and Julianne Winkelmann to serve as additional faculty. Workshop presentations expanded participants' ability to outline the clinical features and diagnostic criteria of RLS, differentiate RLS from periodic limb movements, to discuss the assumed pathophysiological mechanisms proposed to underlie RLS and

to describe a diagnostic workup for RLS. Additionally, those in attendance indicated an increased aptitude for listing therapeutic approaches to RLS, including the selection of pharmacological agents and treatment issues of special populations. Video workshops highlighting case presentations and diagnostic tools were presented during the afternoon.

The Society is encouraged by the development of this program and is enthusiastic about offering additional educational activities on RLS. The course program is now available for similar courses being held in different places. Please be sure to keep in contact with the Education section of the MDS Web site to learn of additional opportunities.

Upcoming MDS Educational Activities

The Many Faces of Dystonia:

A Frequently Misdiagnosed Disorder

A PRACTICAL and VIDEO-INTERACTIVE COURSE

This course will focus on increasing awareness of dystonia in the general neurology community by addressing topics related to the diagnosis and misdiagnosis of dystonia. Using a video-case based template, the course would highlight focal and generalized dystonia, demonstrating the spectrum of disease from mild to severe and the appropriate work-up. Treatment strategies will be summarized but not highlighted.

September 15, 2006 – New York, New York USA

Course Director: Susan B. Bressman, MD

October 20, 2006 – Chicago, Illinois USA

Course Director: Cynthia L. Comella, MD

November 17, 2006 – Los Angeles, California USA

Course Director: Mark F. Lew, MD

To obtain registration details and further information, please visit the MDS Web site at www.movementdisorders.org, or contact Bart Griepentrog, Senior Education Program Manager, by e-mail at bgriepentrog@movementdisorders.org or via telephone at +1 414-276-2145.

<p>September 15, 2006 New York New York, USA</p> 	<p>October 20, 2006 Chicago Illinois, USA</p> 	<p>November 17, 2006 Los Angeles California, USA</p> 
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PROFESSIONAL NOTICES

Announcements

The Progressive Supranuclear Palsy [PSP-Europe] Association

Research and Fellowship Grant Announcements for 2006-2007

The PSP Association announces that funding for research into PSP is available. Applicants should apply to the Sara Koe PSP Research Centre, 1 Wakefield Street, London WC1N 1PJ or by email to s.stoneham@ion.ucl.ac.uk for details. Preference will be given to two-year research fellows.

Sarah Matheson Trust Research Fellowship

The Sarah Matheson Trust invites proposals for the funding of a research fellowship. Potential candidates will need to identify a supervisor in a UK based research facility and plan to carry out a three year project, focused on the mechanisms involved in the disease process of multiple system atrophy, with the potential of finding the cause and treatment of the condition.

£60,000 p.a is available to cover salary, some laboratory consumables and modest travel costs. The closing date for applications is 31st September 06. Those interested should contact The Administrator, The Sarah Matheson Trust, Pickering Unit, St Mary's Hospital, Praed Street, London, W2 1NY.

MDS Accepting Applications for the Visiting Professor Program

The *Movement Disorder Society* (MDS) is currently accepting applications for countries interested in hosting a Visiting Professor in the MDS-sponsored Visiting Professor Program. The MDS Visiting Professor Program provides educational opportunities in Movement Disorders to regions of the world that are under represented in MDS and do not have regular access to educational programs in Movement

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Disorders. For more information or applications for this program, please click on the following link, <http://www.movementdisorders.org/education/visitingprofessor.shtml> or contact Bart Griepentrog, MDS Senior Education Program Manager, at +1 414-276-2145.

Job Openings

Movement Disorder Position at the University of Louisville

Immediate opening for two full-time faculty to join our Movement Disorder Program at the University of Louisville. BE or BC Neurologist with completed Fellowship training in Movement Disorders is required. Successful candidates will be responsible for the clinical care of Movement Disorder patients in the outpatient, inpatient and consultation settings. They will participate in the development and conduction of research studies and will have opportunities to develop areas of professional interest. Rank and appointment consistent with qualifications and experience. Interested candidates should send a resume, statement of career interests and objectives, and three letters of recommendation to: Irene Litvan, M.D., Director, Movement Disorder Program, Department of Neurology, University of Louisville, 500 South Preston, A Building, Room 113, Louisville, KY 40202. Phone: 502-852-3655/ FAX: 502-852-6344, E-mail: i.litvan@louisville.edu.

BC/BE Neurologist to Join Private Practice in Minnesota

There is a unique opportunity for a BC/BE neurologist with special interest and training in Movement Disorders to join an established private practice of nine neurologists in St. Paul, MN (# 2 of Kiplinger's 50 "smart places to live", June 2006) and to assume Medical Director responsibilities of a non-profit, hospital-based out patient Parkinson Center. The position is oriented toward patient care, clinical research and management of a newly inaugurated PD center. Please note this is primarily a clinical position involving general neurology with emphasis on Movement Disorders.

If interested, please contact Terrance Capistrant at the Capistrant Parkinson Center at 1-651-232-2098.

Seattle Neuroscience Institute - Movement Disorder Neurologist

An opportunity presents for an exceptional living and working experience in the beautiful Pacific Northwest. The Seattle Neuroscience Institute (SNI) at Swedish Medical Center in the heart of Seattle is seeking a Medical Director for the Movement Disorders Program, who has completed a Movement Disorders fellowship, and has a high degree of interest in Deep Brain Stimulation surgery and management of Parkinson's disease and other Movement Disorders. The candidate will have the opportunity to further develop a growing program that already has a strong foundation, and is the busiest in the Northwest for surgery.

At the SNI, multiple disciplines are represented and integrated in the care of the patient with neurological disorders. Collegiality with specialty teams exists across the board, including Stroke (Codman Award 2005), Epilepsy, Multiple Sclerosis, Pain and Spasticity. The Neurosurgery and Interventional Radiology Programs are among the strongest in the country with state of the art technology, including a new Cyberknife Unit. Multiple clinical trials are ongoing and well supported by our neuroscience research team.

Swedish Medical Center has served the greater Seattle community with excellence for nearly 100 years. It has grown into the largest hospital-based medical delivery system in the Northwest, with four campuses, each offering areas of specialized expertise. The Pacific Northwest geographically provides a catchment area of approximately six million people, is under-represented in the specialty of Movement Disorder Neurology. This is a tremendous and exciting opportunity for an energetic individual who would like to partner with a team of professionals who are committed to providing the very best in healthcare.

Interested parties please contact Dr. Marc Mayberg at 206-320-2800.

Wisconsin Gundersen Lutheran Health System Neurologist - Movement Disorders

The Neurology Department at Gundersen Lutheran Health System has an opening for a Movement Disorders Specialist at our main campus in La Crosse, Wisconsin. With seven Neurologists and five Neurosurgeons on staff, you can enjoy system referrals and a balanced lifestyle. The Movement Disorders Specialist will contribute as a general neurologist in addition to partnering with the Neurosurgery and PM&R Departments to grow our Movement Disorders program. The preferred candidate will be BC/BE in Neurology and Fellowship trained in Movement Disorders with an interest in deep brain stimulation.

Gundersen Lutheran Health System is a large, multi-specialty group practice with over 475 medical and associate staff headquartered in La Crosse, Wisconsin. In addition to being a 325-bed teaching and research hospital with trauma and emergency center, we support a diverse population of over 600,000 residents covering three states. Our service to the community includes 22 regional clinics and the main campus is an accredited Level II Trauma Facility. Gundersen Lutheran's reputation for excellence has earned the designation as the Western Campus of the University of Wisconsin Medical School and is consistently named a top 100 facility in the nation.

To submit your CV, please contact: Jon Nevala, Medical Staff Development at jnnevala@gundluth.org, or by phone at 1-800-362-9567, ext. 54224. Visit us at www.gundluth.org. GLHS is not sponsoring Visas at this time.

2006

* Meetings Sponsored, Supported and/or Endorsed by MDS

August 12, 2006

How to Treat Dystonia and Spasticity with Botulinum Toxin (For Residents and Fellows Only). Philadelphia, PA, USA. Contact: Members Services, American Academy of Neurology, 1080 Montreal Ave., Saint Paul, MN 55116 USA; TEL: +1 800-879-1960; E-mail: memberservices@aan.com; Web site: www.aan.com/ds

***September 1-6, 2006**

10th European Federation of Neurological Societies Congress. Glasgow, Scotland. Contact: EFNS, Neurological Hospital Rosenhugel, Riedelgass 5, A-1130, Vienna, Austria; TEL: + 43-1-880-00-270; FAX: + 43-1-88-92-581; E-mail: headoffice@efns.org

September 10-14, 2006

28th International Congress of Clinical Neurophysiology. Edinburgh, Scotland. Contact: Michelle Kane, Concorde Services Ltd., 4B, 50 Speirs Wharf, Port Dundas, Glasgow G4 9TB; TEL: + 44-141-3310123; FAX: + 44-141-3310234; E-mail: info@iccn2006.com

September 12-16, 2006

18th Congress of the European Sleep Research Society. Innsbruck, Austria. Contact: PCO Tyrol Congress, Rennweg 3, A-6020 Innsbruck, Austria; TEL: +43-512-575600; FAX: +43-512-575607; E-mail: esrs2006@come-innsbruck.at; Web site: www.pco-tyrolcongress.at

September 13-16, 2006

American Academy for Cerebral Palsy and Developmental Medicine Annual Meeting. Boston, MA, USA. Contact: Tracy Burr, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-918-3014; FAX: +1 414-276-2146; E-mail: tburr@aacpdm.org; Web site: http://www.aacpdm.org

***September 15, 2006**

The Many Faces of Dystonia: A Frequently Misdiagnosed Disorder. New York, NY, USA. Contact: Bart Griepentrog, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: bgriepentrog@movementdisorders.org; Web site: www.movementdisorders.org

September 17-21, 2006

11th ESH Congress: Hypnosis & Hypnotherapy: Trauma and Pain. Vienna, Austria. Contact: Marianne Martin, MEGA, Sternwartestr. 21a, 1180 Vienna, Austria; TEL: +43-1-479-6458; FAX: +43-1-440-7290; E-mail: marianmartin-isorec@aon.at; Web site: www.hypno-mega.at

***September 22, 2006**

Dopamine Transporter Imaging in Neurological Practice. London, United Kingdom. Contact: Andrea Hunter, Program Manager, The Movement Disorder Society, 555 East Wells Street, Suite 1100, Milwaukee, WI 53220 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: ahunter@movementdisorders.org; Web site: www.movementdisorders.org/education/

September 29-30, 2006

4th Cellular and Molecular Treatments for Neurological Diseases. Cambridge, MA, USA. Contact: Ole Isacson, MD, McLean Hospital/Harvard Medical School, 115 Mill St. MRC 130, Belmont, MA 02478 USA; TEL: +1 617-855-2440; FAX: +1 617-855-2522; E-mail: nrladmin@mclean.harvard.edu; Web site: http://www.neuroregeneration.org/cmt4.htm

September 29-30, 2006

European Parkinson's Disease Association: 6th Multidisciplinary Conference. Ljubljana, Slovenia. Contact: Lizzie Graham, Secretary General, European Parkinson's Disease Association, 4 Golding Road, Sevenoaks, Kent, TN13 3NJ United Kingdom; TEL/FAX: +44-1732-457-683; E-mail: lizzie@epda.eu.com; Web site: www.epda.eu.com

***October 3-4, 2006**

Deep Brain Stimulation: Clinical Aspects in Movement Disorders. London, United Kingdom. Contact: M. Samuel, MD, Department of Neurology, King's College Hospital, London, United Kingdom; TEL: +1 44-020-7346-1998 ext. 8336; FAX: +1 44-020-7346-8357; E-mail: mike.samuel@kingsch.nhs.uk

October 7-12, 2006

Congress of Neurological Surgeons 56th Annual Meeting. Chicago, IL, USA. Contact: Congress of Neurological Surgeons, 10 North Martingale Road, Suite 190, Schaumburg, IL 60173 USA; TEL: +1 847-240-2500; FAX: +1 847-240-0804; E-mail: info@1cns.org

***October 8, 2006**

20th Annual symposia on Etiology, Pathogenesis and Treatment of Parkinson's Disease and other Movement Disorders (immediately preceding the ANA meeting). Chicago, IL, USA. Contact: Parkinson Study Group, Clinical Trials Coordination Center, 1351 Mt. Hope Avenue, Suite 223, Rochester, NY 14620 USA; TEL: +1 585-275-1642; FAX: +1 585-273-1074; E-mail: abstract@ctcc.rochester.edu; Web site: www.parkinson-study-group.org

October 8-11, 2006

131st Annual Meeting of the American Neurological Association. Chicago, IL, USA. Contact: American Neurological Association, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416 USA; TEL: +1 952-545-6284; FAX: +1 952-545-6073; E-mail: lorijanderson@msn.com; Web site: www.aneuroa.org

October 11-14, 2006

AANEM Annual Scientific Meeting. Washington, DC, USA. Contact: Shelly Hansen, AANEM, 421 1st Avenue, SW Ste 300E, Rochester, MN 55902 USA; TEL: +1 507-288-0100; FAX: +1 507-288-1225; E-mail: aanem@aanem.org; Web site: www.aanem.org

October 13-15, 2006

2006 AAN Fall Conference. Washington, DC, USA. Contact: Member Services, American Academy of Neurology, 1080 Montreal Ave., St. Paul, MN 55116 USA; TEL: +1 800-879-1960; E-mail: memberservices@aan.com; Web site: www.aan.com/journals

***October 20, 2006**

The Many Faces of Dystonia: A Frequently Misdiagnosed Disorder. Chicago, IL, USA. Contact: Bart Griepentrog, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: bgriepentrog@movementdisorders.org; Web site: www.movementdisorders.org

***October 28, 2006**

Third International Symposium on Neuroacanthocytosis: The Asian Perspective. Kyoto, Japan. Contact: Ruth Walker, MB, ChB, PhD, Movement Disorders Clinic, Department of Neurology, Bronx VA, 130 W. Kingsbridge Road (127), Bronx, NY 10468 USA; TEL: +1 718-584-9000 x5915; FAX: +1 718-741-4708; E-mail: ruth.walker@mssm.edu; Shinji Saiki, MD, ss644@cam.ac.uk; Glenn Irvine, glenn@naadvocacy.org, TEL: +44 20 7409 0092; Web site: www.naadvocacy.org

***October 28, 2006**

Attacking the Mystery of Freezing of Gait in Parkinsonism. Kyoto, Japan. Contact: FAX: +1 972-3-697-4911; E-mail: yeoditk@tasmc.health.gov.il

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* Meetings Sponsored, Supported and/or Endorsed by MDS

*October 28-November 2, 2006

10th International Congress of Parkinson's Disease and Movement Disorders. Kyoto, Japan. Offered by The Movement Disorder Society. Contact: The Movement Disorder Society, 555 E. Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: congress@movementdisorders.org; Web site: www.movementdisorders.org

November 1-4, 2006

17th International Symposium on the Autonomic Nervous System. Rio Grande, Puerto Rico. Contact: Anita Zeller, American Autonomic Society, 18915 Inca Avenue, Lakeville, MN 55044 USA; TEL: +1 952-469-5837; FAX: +1 952-469-8424; E-mail: zeller.anita@mayo.edu; Web site: www.americanautonomicsociety.org

November 2-4, 2006

The 4th International Workshop on DLB and PDD. Yokohama, Japan. Contact: Yukiko Miyazono, Convention Linkage, Inc., Sanbancho KS BLDG., 2 Sanbancho Chiyodaku, 102-0075 Tokyo, Japan; TEL: + 81-3-3263-8688; FAX: 81-3-3263-8693; E-mail: dlb2006@secretariat.ne.jp; Web site: http://www.secretariat.ne.jp/dlb2006

November 4-5, 2006

27th Annual Neurorehabilitation Conference on Traumatic Brain Injury, Stroke and Other Disorders. Boston, MA, USA. Contact: Donna Carr, HealthSouth Braintree Rehabilitation Hospital, 250 Pond Street, Braintree, MA 02184 USA. TEL: +1-781-348-2113; FAX: +1-781-380-4196; E-mail: donna.carr@healthsouth.com; Web site: www.braintreehospital.org

*November 17, 2006

The Many Faces of Dystonia: A Frequently Misdiagnosed Disorder. Los Angeles, CA, USA. Contact: Bart Griepentrog, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: bgriepentrog@movementdisorders.org; Web site: www.movementdisorders.org

*December 5, 2006

Dopamine Transporter Imaging in Neurological Practice. Copenhagen, Denmark. Contact: Andrea Hunter, Program Manager, The Movement Disorder Society, 555 East Wells Street, Suite 1100, Milwaukee, WI 53220 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: ahunter@movementdisorders.org; Web site: www.movementdisorders.org/education/

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