MYELOMA TODAY

SPRING 2005
VOLUME 6 NUMBER 4

A Publication of the International Myeloma Foundation

Dedicated to improving the quality of life of myeloma patients while working towards prevention and a cure.

Highlights

S. Vincent Rajkumar, MD

Michael J. Hyman, MD

Susan J. Leclair, PhD, CLS(NCA)

10th International Workshop in Myeloma

SCIENTIFIC PROGRAM HIGHLIGHTS FROM AUSTRALIA

The IMF is pleased to bring you the most comprehensive coverage of the International Myeloma Workshop, held in Sydney, Australia in April, 2005. Below are summaries for all sessions. The presenters' slides may be reviewed in detail at www.myeloma.org. Video of a number of key sessions may also be viewed online. The IMF will be publishing a printed guide to the workshop which will have a companion DVD. As soon as this guide is available, we will announce it on our website at www.myeoloma.org.

April 10, 2005

The 10th International Myeloma Workshop commenced with an official welcome by **Her Excellency Marie Bashir**, Governor of New South Wales. Governor Bashir was excited about what the workshop would hold for the 1,100 participants from 64 countries. She noted the involvement of the IMF in the organization and success of previous Workshops, and spoke about the work that Susie Novis, President and one of the founders of the IMF, has done on behalf of the myeloma community.

Prof. Doug Joshua, Chairman of the Workshop, then took the stage and introduced Susie Novis who presented a video that highlighted the IMF's groundbreaking research programs.

Next, **Ann Man** of the International Waldenstroms Macroglublinemia Foundation presented its Robert Kyle Award to **Dr. Steven Treon** of the Dana Farber Cancer Institute.

Prof. Jean-Luc Harrouseau was the recipient of the Waldenstrom Award for a lifetime of achievement in myeloma. Prof. Harrouseau has been a leader in the French Myeloma group, IFM, which has conducted several groundbreaking clinical trials in myeloma. Prof. Harrouseau delivered an overview of his work in multiple myeloma.

April 11, 2005

The workshop was opened by Prof. Joshua who noted that due to the vast amount of material to be covered, the w o rkshop would include concurrent plenary and focus sessions, a chairman's symposia, oral presentations for abstracts, poster sessions, industry exhibitions, and industry-sponsored symposia. He credited the development of the comprehensive program to **Dr. Joy Ho**.

PLEASE SEE PAGE 3

This issue of MYELOMA TODAY is supported by:
Celgene Corporation and Millennium Pharmaceuticals.

International Myeloma Foundation

Dedicated to improving the quality of life of myeloma patients while working towards prevention and a cure.

IMF Headquarters

12650 Riverside Drive, Suite 206
North Hollywood, CA 91607-3421 U.S.A.
Tel: 818-487-7455 or 800-452-CURE (2873)
Fax: 818-487-7454 E-mail: TheIMF@myeloma.org Website: www.myeloma.org

IMF Staff

Vice President, Member Services
Kelly Cox (kcox@myeloma.org)

Vice President, Operations
David Smith (dsmith@myeloma.org)

Member Fundraiser Coordinator
Suzanne Battaglia (sbattaglia@myeloma.org)

Hotline Coordinator
Paul Hewitt (phewitt@myeloma.org)

Database & Inventory Control
Macky Lee (klee@myeloma.org)

Hotline Coordinator
Nancy Baxter (nbaxter@myeloma.org)

Meeting & Event Services
Spencer Howard (showard@myeloma.org)

Associate Director, Development
Candace McDonald (cmcdonald@myeloma.org)

Hotline Coordinator
Debbie Birns (dbirns@myeloma.org)

Publications Editor
Marya Kazakova (mkazakova@myeloma.org)

Director, Medical Meetings & CME Programs
Lisa Paik (lpaik@myeloma.org)

Director, Public Advocacy
Greg Brozeit (greg.brozeit@sbcglobal.net)

Director, Support Groups
Andrew Lebkeucher (imfsupport@charter.net)

Webmaster
Abbie Rich (arich@myeloma.org)

Public Relations
Robin Finn (rfinn@myeloma.org)

Specialty Member Services Coordinator
Kemo Lee (klee@myeloma.org)

Assistant, Support Groups
Robin Tuohy (tuohy@snet.net)

SCIENTIFIC PROGRAM HIGHLIGHTS FROM SYDNEY, AUSTRALIA

Malignant Clone

• **Dr. Ian MacLennan** presented on MM[1] cells in the bone marrow producing antibodies via traditional and non-traditional (alternative) pathways. Some studies show that cells producing antibodies (B-cell memory clones) respond to various triggers and that these cells can undergo mutations. Other studies show that there are alternate sources of tumor plasma cells and suggest that both traditional and non-traditional pathways for producing antibodies exist.

• **Dr. Selina Chen-Kiang** identified MM as a disease of cell cycle dysregulation and loss of apoptotic control. She proposed that an imbalance in positive and negative cell cycle regulators occurs as an early event in MM pathogenesis. The use of the functional cell assay along with other prognostic indicators may improve the ability to characterize the likelihood of disease progression and the aggressiveness of the disease, and may assist with the development of therapies targeted at cell cycle regulation.

• **Dr. Federico Caligaris-Cappio** reviewed the role of hypoxia in the interactions between plasma cells and the bone marrow microenvironment. Such interactions may serve as a new target for developing therapies.

• **Dr. Jesus San Miguel** addressed the use of immunophenotyping, which identifies the abnormalities in plasma cells and thus provides a means to distinguish between MGUS[2] and MM. When assessing minimal residual disease, immuno-phenotyping applies to the vast majority of patients and is highly predictive or the risk of relapse. Results of more than 700 of his MM patients support the clinical benefits of immunophenotyping.

Cytogenetics & Molecular Pathogenesis

• **Dr. Michael Kuehl** discussed the integration of genetics in a comprehensive pathogenesis model for MM. He stated that MGUS and MM may be considered as a cluster of different diseases that have distinct characteristics through progression of the diseases. MM can be organized into 7 groups with variable degrees of bone disease, frequency of relapse, and progression of tumors. Dr. Kuehl suggested that dysregulation of the cyclin D gene may be an early or initiating event in the development of MGUS and MM, and that characterizing tumor cells may assist with the selection of therapies most likely to be effective.

• **Dr. Leif Bergsagel** discussed how early pathogenic events determine MM biology and clinical course. Specific IgH gene translocations, while infrequent at diagnosis, increase in frequency with relapse and correlate with poor prognosis. By analyzing 6 specific genes, clinical features of individual's disease, prognosis, and response to therapy can be identified. Dr. Bergsagel and associates are evaluating novel agents that would specifically influence 4p16 immunoglobulin translocation.

• **Dr. Rafael Fonseca** reviewed the integration of genetics in a comprehensive pathogenesis model for MM and suggested that genetics must be incorporated into the development of targeted therapies.

• **Dr. Johannes Drach** reviewed the epigenetic changes in the molecular pathology of MM. Methylation of specific regions of genes blocks tumor suppression genes in some cancers. Dr. Drach and colleagues identified genes associated with MM and report that the development of MM is stimulated by multiple genetic abnormalities and that methylation may be a signal of an early event or of disease progression.

• **Dr. Linda Pilarski** presented findings on alternative gene splicing in myeloma. Hyaloronan synthetase 1 (HAS1) synthesizes hyaluronan (HA), an extracellular matrix protein that is involved in cell signaling and in malignant progression. HAS1 is the first blood-born prognostic marker for malignant cells. She reported that abnormal forms of HAS1 may predispose patients to disease or to the development of progressive MM and short survival.

Innovations in Standard & Supportive Therapy

• **Dr. Donna Weber**'s review of several trials utilizing combination therapy of thalidomide in untreated MM showed a clear superiority for using thalidomide, but also the increased risk of thrombosis and neuropathy. Trials have ensued using combination thalidomide with prophylactic anticoagulants. Further research will evaluate the use of newer agents and lower doses of thalidomide to provide a greater response with fewer effects.

• **Dr. Maurizio Zangari** reviewed the use of thalidomide. Research demonstrated a possible association of thalidomide with thromboembolism. Because incidence was low, several trials with thalidomide in combination with existing agents have been investigated for the newly-diagnosed MM patient. Incidence of thrombosis has been observed to occur in early treatment with thalidomide and there is a higher incidence with newly diagnosed patients compared with relapsing patients. Studies suggest that there may be a reduction of thrombosis with prophylactic therapy. Sinus bradycardia is another complication seen in trials with thalidomide, and prophylactic use of anticoagulants is recommended for cardiovascular complications.

• **Dr. James Berenson** presented new advances in the management of myeloma bone disease. A review of a 21-month period showed that more than half of MM patients develop bone fractures requiring radiotherapy. Dr. Berenson reviewed the use of bisphosphonates, comparing zoledronic acid to pamidronate. Zoledronic acid was as effective as pamidronate; however, the infusion rate was modified to reduce the risk of renal impair-

PLEASE SEE SYDNEY, PAGE 26

Table of Contents

IMF Calendar

May 14 - 17	American Society of Clinical Oncology (ASCO) Meeting	Orlando, FL
June 2 - 5	European Hematology Association Meeting	Stockholm, SWEDEN
June 8 - 11	International Conference on Malignant Lymphoma	Lugano, SWITZERLAND
June 10 - 11	Patient & Family Seminar	Chicago, IL
June 11 - 13	Eastern Cooperative Oncology Group (ECOG) Meeting	Washington, DC
June 24-25	Patient & Family Seminar	Los Angeles, CA
July 8 - 10	Multiple Myeloma Support Group Leaders' Retreat	Durham, NC
July 22 - 23	Patient & Family Seminar	Toronto, CANADA
August 18-19	Patient & Family Seminar	Baltimore, MD
September (date TBD)	Clinical Meeting	St. Petersburg, RUSSIA
September 27	Robert A. Kyle Award Dinner	Boston, MA
September 28 - October 2	Southwest Oncology Group (SWOG) Meeting	New Orleans, LA
October 7 - 8	Patient & Family Seminar	Madrid, SPAIN
October 14 - 15	Patient & Family Seminar	Rome or Torino, ITALY
October 21 - 22	Patient & Family Seminar	Heidelberg, GERMANY
October 28 - 29	Patient & Family Seminar	Paris, FRANCE
November 12	Ribbon of Hope Gala	Los Angeles, CA
November 19 - 21	Eastern Cooperative Oncology Group (ECOG) Meeting	Tampa, FL
December 3-6	American Society of Hematology (ASH) Meeting	New Orleans, LA

For more information, please visit www.myeloma.org or call 800-452-CURE (2873).
IMF(Japan) and IMF(UK) events are not included above.

Research in myeloma is a crucial component in improving the quality of life of patients today, and ultimately finding a cure for tomorrow. Since 1990, the International Myeloma Foundation (IMF) has supported research through demographic analysis of risk factors to determine what causes myeloma. In 1994, the IMF established the Brian D. Novis Research Grant program to support both junior and senior investigators conducting cutting-edge studies to provide better treatment, management, prevention, and ultimately, a cure for myeloma.

2005 BRIAN D. NOVIS SENIOR RESEARCH GRANTS

Henk M. Lokhorst, MD, PhD

Henk M. Lokhorst, MD, PhD
Myeloma Research Laboratory
Department of Haematology
University Medical Center
Utrecht, The Netherlands

Statins are widely used for the treatment of hypercholesteremia. We discovered in the lab that statins may also kill multiple myeloma (MM) tumour cells and make them more sensitive to drugs. Based on this, we have performed a phase I clinical trial to determine which high doses of statins can be safely given to patients. We will next test the efficacy of the combination of high-dose statin therapy and vincristine, Adriamycin, and dexamethasone (VAD) chemotherapy. Additional laboratory tests, including DNA analysis of the patient tumour cells, should tell us more about how these statins work and what determines the sensitivity/resistance of the MM cells. Results may form the basis for a new treatment for MM. **MT**

Daniel M.Y. Sze, MD, PhD

Daniel M.Y. Sze, MD, PhD
Senior Research Scientist
Institute of Haematology
Royal Prince Alfred Hospital
Sydney, Australia

NK-92 cells are the only natural killer (NK) cell lines being used in phase I/II clinical trials. They are highly cytotoxic against a variety of malignant cells; and most importantly, the NK-92 cells display a much higher cytolytic activity against malignant cells of hematologic origin. We plan to engineer the surface expression of CD38 molecules, which are highly expressed on tumour multiple myeloma (MM) tumor cells. In contrast to parental NK-92 cells, the genetically modified NK-92 cells may specifically and efficiently kill CD38-expressing MM tumor cells. This provides a useful strategy for the development of effective cell-based therapeutics for the treatment of MM. **MT**

2005 BRIAN D. NOVIS JUNIOR RESEARCH GRANTS

Kewal Asosingh, PhD
Department of Pathobiology
Lerner Research Institute
Cleveland Clinic Foundation
Cleveland, Ohio

For the development of new, more effective strategies in the treatment of cancers, understanding of the biological heterogeneity in the tumor population and of tumor-host interactions during tumor progression is an important goal. Only specific subsets within the parental tumor have the necessary receptors for motility, invasiveness, and tumor spread. In different tumor stages remodeling of the extracellular matrix occurs, by exchange of proteinases and cytokines between stromal cells and cancer cells. This modified microenvironment stimulates invasion and promotes survival and proliferation of the cancer cells. Only specific cancer cell populations are able to induce the production of survival/growth factors and proteolytic enzymes by local stromal

PLEASE SEE GRANTS NEXT PAGE

GRANTS — continued

Kewal Asosingh, PhD

cells and have the capacity to induce angiogenesis, which is pivotal for progressive tumor growth. In multiple myeloma (MM) research, understanding of the heterogeneity, in general, and understanding of the specific roles of CD45 subsets, in particular, is still in its infancy. CD45 is a transmembrane tyrosin phosphatase. While immature plasma cells are CD45 positive, fully matured plasma cells lose all CD45 expression. MM patients have a heterogeneous CD45 expression pattern and very recently CD45 appeared to be a predictor of therapeutical response. In our previous work (supported by the first IMF Brain D. Novis Award) the functional roles of CD45+ and CD45- 5TMM cells during intra-medullary progression were analyzed. In addition gene expression profile of 5T2MM cells during intra-medullary progression was investigated. MM-cells from 3 subsequent disease stages, quiescent, intermediate, and end-stage, were analyzed using microarrays containing 21,492 Unigene cDNA sequences. ~ 3000 cells of differentially expressed genes were obtained. Most of these genes were silenced during tumor progression. In the early stage, the MM cells had up-regulated genes involved in bone marrow homing (CCR2, CCR5), motility (tetraspanins, 67kD laminin receptor, paxillin, zyxin, prolactin receptor), invasion (annexin II, cathepsins), adhesion (integrins, ALCAM) and cell adhesion-mediated drug resistance (fibronectin). Genes involved in apoptosis (Mcl-1), plasma cell differentiation (XBP-1), angiogenesis (neuropilin-2, angiopoietin-like 4), hypoxia (HIF-1a, carbonic anhydrase 9), and in retention (CXCR4/CXCL12) and anchoring of MM-cells (laminin, collagens) in the BM were up-regulated during progressive stages. Quantative RT-PCR confirmed the trend of expression.

In the current project we will start investigating therapeutical potentials of the most promising differentially expressed genes. **MT**

Loren D. Erickson, PhD

Loren D. Erickson, PhD
Research Assistant Professor
Microbiology & Immunology
Dartmouth Medical School
Norris Cotton Cancer Center
Lebanon, New Hampshire

A hallmark of a protective antibody response to pathogens is its longevity, and is the basis of childhood vaccinations. One cellular component that contributes to the vast lifespan of this response is the plasma cell (PC). While PC longevity is an asset for protective immunity, it is a morbid liability in PC malignancies, like multiple myeloma (MM) and plasma cell leukemia. We have identified a novel cell type that is a proximal precursor of PCs (PCpre) that we believe represents the normal counterpart to the malignant stem cell of MM. Like PCpre, MM cells reside within the bone marrow (BM) which provides factors critical for their survival. The inextricable link between the BM microenvironment and the persistence of MM cells has drawn our attention to a newly-identified molecule, BCMA, which we have shown to be critical for the survival of normal long-lived BM PCs. Proposed studies are designed to explore what signals within the BM microenvironment foster the survival of PCpre and their continued maturation to long-lived PCs. We will also determine if BCMA is involved in the survival of MM and mediates resistance to drug-induced killing. Understanding the biology of the BM milieu in relation to PC survival is critical for developing novel therapeutic targets in the treatment of MM and other B cell malignancies. **MT**

Niels W.C.J. van de Donk, PhD
Research Associate
Hematology & Immunology
University Medical Center
Utrecht, The Netherlands

Geranylgeranylation is essential for the membrane localization and full biologic activity of several proteins including the GTP-binding proteins Rac-1, Cdc42, and RhoA. In previous work, we have shown that protein geranylgeranylation is important for the survival and proliferation of tumor cells from patients with multiple myeloma (MM).

Please see GRANTS page 8

UPDATE ON LENALIDOMIDE (CC-5013; REVLIMID®)

S. Vincent Rajkumar, MD

Over the last five years, numerous clinical trials have shown that thalidomide is effective in the treatment of multiple myeloma. In fact, thalidomide plus dexamethasone (Thal/Dex) has rapidly become one of the more commonly used regimens for the initial treatment of myeloma. Given this success, there has been intense research to develop a safer and more effective version of thalidomide. Lenalidomide (CC-5013; Revlimid®) is the first analog (close cousin) of thalidomide to enter clinical trials. It may prove to be more effective and safer than thalidomide. Like thalidomide, it is taken by mouth, as a capsule, and does not carry the type of side effects commonly associated with cancer chemotherapy like nausea, vomiting, and hair loss.

S. Vincent Rajkumar, MD
Associate Professor of Medicine
Mayo Clinic
Rochester, Minnesota

Initial studies with lenalidomide, as with most new drugs to treat cancer, were carried out in the laboratory on myeloma cells and in animal models of myeloma. In these studies, the drug was found to be several-fold more powerful than thalidomide. This led to several clinical trials in patients with multiple myeloma.

The first clinical trials were conducted to determine the correct dose of the drug and to establish its safety (Phase I trials). These trials were carried out at the University of Arkansas (Little Rock, AR) and the Dana-Farber Cancer Institute (Boston, MA). These studies showed that the maximum tolerated dose of lenalidomide was 25mg daily. Importantly, in both trials, patients with advanced multiple myeloma responded to the treatment. At least a 25% drop in the M protein (M spike; paraprotein level) was seen in 50-60% of the patients. These results were particularly impressive because most patients had failed other effective regimens, and some had already failed thalidomide.

With the success of these initial trials, a larger trial was conducted to more accurately determine the response rate with lenalidomide in patients with relapsed and refractory myeloma (Phase II trial). This trial was conducted jointly at the Dana-Farber Cancer Institute, Mayo Clinic (Rochester, MN), St. Vincent's Hospital (New York, NY), and the H. Lee Moffitt Cancer Center (Tampa, FL). Of 101 patients treated, approximately 25% achieved a partial response to therapy which is a 50% or higher reduction in M protein level. Overall about 35% of patients had a drop in their M spike by at least 25%.

Lenalidomide was in the news recently when two large randomized studies showed that the combination of lenalidomide plus dexamethasone (Rev-Dex) is significantly more effective than dexamethasone alone. These studies are referred to as Phase III trials, in which patients were assigned to either of the two treatments being studied by a computer program similar to a coin toss. All patients had relapsed/refractory myeloma. Over 700 patients participated in these Phase III trials. The time from diagnosis to myeloma progression was much longer in patients receiving lenalidomide plus dexamethasone compared to dexamethasone alone. These results are very exciting and suggest that lenalidomide is a very active drug to treat multiple myeloma. These studies will hopefully lead to approval of the drug by the Food and Drug Administration when the final efficacy and safety data are reviewed.

As with thalidomide, the effectiveness of lenalidomide in patients at the relapsed and refractory stage has led to clinical trials in newly diagnosed myeloma, as first-line treatment. In a recent Mayo Clinic trial, over 80% of patients with newly diagnosed myeloma responded to the combination of lenalidomide plus dexamethasone (Rev-Dex). There were far fewer serious side effects compared to the Thal-Dex regimen. As a result, Rev-Dex promises to be one of the major treatment options when patients are first diagnosed with myeloma. Since lenalidomide is not commercially available, the Rev-Dex regimen is currently available to patients only as

PLEASE SEE LENALIDOMIDE NEXT PAGE

LENALIDOMIDE — continued

part of clinical trials. In the United States, two large trials are available to patients with newly diagnosed myeloma. These trials are coordinated by the Eastern Cooperative Oncology Group (ECOG) and the Southwest Oncology Group (SWOG), and are available through many centers nationwide. Please visit the IMF website at www.myeloma.org or call 800-452-CURE (2873) to learn more about clinical trial enrollment.

Lenalidomide is dispensed as capsules. The most common dosing used in multiple myeloma is 25 mg given orally daily on days 1-21 and repeated every 28 days (days 22-28 are rest days). Doses are then modified based on side effects. The main side effects are low blood counts. Unlike thalidomide, significant sedation, constipation, or neuropathy is not common with this drug. Although no birth defects have been reported with lenalidomide, stringent precautions to prevent pregnancy and to prevent pregnant woman from receiving this drug are required.

The mechanism by which lenalidomide works is not fully known. It belongs to a class of drugs called "immunomodulatory drugs" (or "ImiDs"). It is felt to work by boosting the immune system to help fight the cancer cells more effectively. Lenalidomide is also directly toxic to the myeloma cells and likely interferes with the blood supply that is needed for cancer cells to grow.

Lenalidomide is not commercially available, but will hopefully be approved in the near future. It is a very promising and effective addition to the treatment of myeloma. Besides trials in newly diagnosed myeloma discussed above, ongoing trials are testing combinations of lenalidomide with other active anti-myeloma agents such as bortezomib (VELCADE®). In addition to myeloma, lenalidomide has also shown efficacy in a certain form of myelodysplastic syndrome, another disease involving the bone marrow. MT

LENALIDOMIDE EXCEEDS EXPECTATIONS IN RELAPSED AND REFRACTORY MM

The Independent Data Monitoring Committee (IDMC) responsible for overseeing two clinical trials of lenalidomide (CC-5013; Revlimid®) found a statistically significant improvement in time to disease progression – the primary endpoint of these Phase III trials – in patients receiving Revlimid plus dexamethasone compared to patients receiving dexamethasone alone. The trials have been unblinded many months earlier than originally projected. Celgene Corporation is allowing all patients in these studies to get Revlimid if they want to. Plans are under way to offer expanded access to Revlimid for patients with previously treated myeloma (subject to appropriate regulatory approval).

GRANTS — continued

In vitro inhibition of geranylgeranylation either by depletion of intracellular pools of geranylgeranylpyrophosphate (GGPP) or by specific inhibition of geranylgeranyl transferase (GGTase) I activity resulted in the induction of apoptosis and reduction of proliferation. These results suggest that inhibition of protein geranylgeranylation may be a new treatment strategy in MM.

It is the aim of the proposed project to evaluate the in vivo efficacy of inhibition of protein geranylgeranylation on MM tumor growth in a RAG-/- mouse model system employing a GGTase I inhibitor (GGTI-2418). To this end luciferase transduced MM cell lines will be injected in RAG-/- mice and the therapeutic potential of GGTI will be quantified using in vivo bioluminescence imaging (BLI). BLI allows non-invasive detection and quantification of luciferase transduced cells. Tumor reduction will be compared to controls and related to inhibition of geranylgeranylation in the tumor cells. These studies provide a framework for future clinical studies based on interference in protein geranylgeranylation. MT

Niels W.C.J. van de Donk, PhD

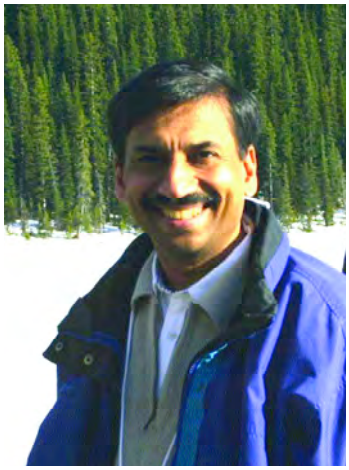
MEET NEW MEMBERS OF THE IMF SCIENTIFIC ADVISORY BOARD

The IMF is pleased to announce that the following distinguished multiple myeloma researchers and clinicians have joined its Scientific Advisory Board.

John Crowley, PhD
President and CEO
Cancer Research And Biostatistics
Seattle, Washington

Dr. John Crowley is President and Chief Executive Officer of Cancer Research And Biostatistics (CRAB). Under Dr. Crowley's visionary leadership, CRAB serves as the Statistical Center for the Southwest Oncology Group (SWOG), a federally sponsored clinical research consortium comprised of thousands of cancer centers and investigators across the US. To serve these groups, Dr. Crowley oversees the study design, protocol development, data management, quality control, data analysis, and statistical research of more than 100 active multi-site clinical cancer trials. CRAB serves as the Statistical Center for the Myeloma Institute for Research and Therapy at the University of Arkansas for Medical Sciences. Dr. Crowley manages a staff of 95 high-level statisticians, data coordinators, and other professionals dedicated to conquering cancer through large-scale clinical trials.

Dr. Crowley's own research interests focus on lung cancer and multiple myeloma. He is one of the first in the country to develop analytical methods and statistical results for micro array-based genomic data on the progression of pre-myeloma to myeloma. He developed the first successful web-based, paperless system to manage the flow of data that arrives at the Statistical Center from around the nation as part of multi-site clinical trials. He is involved in assessing the importance of laboratory findings in predicting survival and forming prognostic groups. His longstanding interest in developing exploratory tools for survival data has produced useful statistical applications in these areas. Dr. Crowley also educates cancer clinicians in the principles and pitfalls of cancer clinical trials. To date, Dr. Crowley has authored over 225 professional papers and books. **MT**



Sundar Jagannath, MD
Chief, Multiple Myeloma Program
St. Vincents Comprehensive Cancer Center
New York, New York

Dr. Sundar Jagannath is an internationally renowned multiple myeloma specialist. He leads the Multiple Myeloma Program at St. Vincent's Comprehensive Cancer Center in New York City. Dr. Jagannath is also Professor of Medicine at New York Medical College. Dr. Jagannath brings a wealth of experience to the field of myeloma. Prior to joining St. Vincent's, Dr. Jagannath was Chief of Bone Marrow Transplantation at the University of Arkansas for Medical Sciences in Little Rock. Before that, he was Assistant Professor of Medicine at the University of Texas, MD Anderson Cancer Center in Houston, Texas. He has published on myeloma and bone marrow transplantation, and is a reviewer for a number of journals. **MT**

Michio M. Kawano, MD
Department of Bio-Signal Analysis
Graduate School of Medicine
Yamaguchi University
Yamaguchi, Japan

Dr. Michio M. Kawano is Professor of Bio-Signal Analysis, Graduate School of Medicine, Yamaguchi University. Dr. Kawano graduated from the Faculty of Medicine at Yamaguchi University and the Graduate School of Medicine at Kyoto University. His research interests include the proliferation of multiple myeloma cells and the IL-6 production of bone marrow mononuclear cells, as well as the function and movement of CD45 molecules in IL6-induced myeloma cell proliferation. **MT**

PLEASE SEE ADVISORS NEXT PAGE

ADVISORS — continued

Giampaolo Merlini, MD
Amyloidosis Centre
Biotechnology Research Laboratories
IRCCS Policlinico San Matteo
University of Pavia
Pavia, Italy

Dr. Giampaolo Merlini graduated cum laude from the University of Pavia (1976) and earned his postgraduate degrees cum laude in Clinical Chemistry (1979), Hematology (1982), and Internal Medicine (1987). He is Director of Biotechnology Research Laboratory and Professor of Clinical Biochemistry at the University of Pavia. Dr. Merlini is a member of Italian Society of Clinical Chemistry, American Association of Immunologists, Italian Society of Experimental Hematology, and International Society of Amyloidosis. He is also Secretary, Italian Society of Amyloidosis and Chairman, Committee on Plasma Proteins, International Federation of Clinical Chemistry. Dr. Merlini is on the Editorial Board of *AMYLOID - The Official Journal of the International Society of Amyloidosis* (1993-present) and is Reviewer for numerous publications. His research interests include staging and treatment of monoclonal gammopathies, structural and functional studies of human monoclonal immunoglobulins with biological activity, study of amyloidosis physiopathology, and epidemiologic and clinical aspects of systemic amyloidoses. He currently holds multiple active research grants from the Italian Ministry of Health. MT

Antonio Palumbo, MD
Ospedale Molinette
Torino, Italy

Dr. Antonio Palumbo is Head of the Myeloma Unit at the Department of Oncology, University of Torino, Italy. He received his medical degree from the Medical School of Torino and undertook both haematology and clinical oncology specialty training at the University of Torino. Dr. Palumbo was Research Associate at the Wistar Institute, University of Pennsylvania. He is one of the founders of the Italian Myeloma Network. In addition to membership in numerous professional organizations, Dr. Palumbo is a journal reviewer, having authored more than 100 publications in peer-reviewed journals, as well as numerous abstracts and several textbook chapters. His current research focuses on the pathogenesis and new therapeutic approaches of myeloma. MT

A. Keith Stewart, MD
Princess Margaret Hospital
Toronto, Canada

Dr. Alexander Keith Stewart graduated from the Medical School at the University of Aberdeen in Scotland. He trained in Internal Medicine at Queen's University in Kingston, Ontario, and specialized in Hematology and Oncology at the University of Toronto and as a Medical Research Council Fellow at the New England Medical Centre in Boston. Dr. Stewart completed an MBA from Ivey Business School at the University of Western Ontario in 2002. He is an Associate Professor at the University of Toronto and holds the Scott-Whitmore Chair in Hematology. In 2002, Dr. Stewart was appointed the inaugural director of the McLaughlin Centre for Molecular Medicine at the University of Toronto. Dr. Stewart is a Senior Scientist at the Ontario Cancer Institute. He is an active researcher and clinician in the biology and treatment of myeloma. MT

UPDATE ON BANK ON A CURE®

At the 10th International Myeloma Workshop held in Sydney, Australia, Brian Van Ness, PhD, gave a progress report on the IMF's ground-breaking research initiative, Bank On A Cure. This initiative was established as a response to a need for a genomic approach to look at the associations between DNA and multiple myeloma risk and outcome. It is hoped that the data will show correlation between genes and survival by identifying genetic variants that are frequent and that correlate with genetic outcomes (survival, progression-free survival, disease complication, disease response and duration, incidence of infection, secondary malignancy occurrence, and risk).

One goal of the studies is to examine the patient's genetic information and to be able to identify the optimum drug (or combination) and the proper dosage of each for that specific individual. Furthermore, future direction for Bank On A Cure includes developing the tools necessary to identify a cluster of genes that are predictive of clinical outcome (i.e., whether a patient will respond to a particular therapy). The small number of patient samples that have been studied to date may lead to inaccurate associations of gene cluster with patient responses. It is therefore imperative to study a larger sample size in order to improve the likelihood of finding definitive correlations.

Please participate today! Contact David Smith, Bank On A Cure Administrator, at 800-452-CURE (2873) or via e-mail at dsmith@myeloma.org. Please be sure to include your name, address, phone number, and the quantity of kits you require (one per person).

ERECTILE DYSFUNCTION: CURRENT TREATMENT OPTIONS

Michael J. Hyman, MD

Erectile dysfunction (ED) is a very common disorder that affects up to half the male population over the age of 40. As one might expect, the degree of severity of ED can range from minimal in younger age groups to severe dysfunction in older age groups. Generally, ED is defined as a difficulty in attaining and maintaining an erection sufficient for satisfactory penetrative intercourse. Unfortunately, despite aggressive marketing by pharmaceutical companies to both physicians and patients, most men never receive treatment.

The causes of ED can be multifactorial, but generally are divided into 3 categories: those resulting from vascular causes, such as high blood pressure and atherosclerosis (hardening of the arteries); neurogenic causes, such as spinal cord injuries; and psychogenic causes, such as chronic depression. Of course, some causes such as diabetes can damage both nerves and blood vessels, leading to both neurogenic and vasculogenic ED. Medications, such as beta blockers used to treat high blood pressure, will often exacerbate underlying ED. Patients should consult with their doctors about changing their medications so that their underlying condition can be treated effectively while minimizing side effects such as ED. Finally, it should be noted that one of the most common and most reversible causes of ED is tobacco smoking. Studies have shown that moderate to severe ED is two times more common among smokers than non-smokers. Cessation of smoking can often result in improvement of erections within a week.

Michael J. Hyman, MD
Urologist-in-Chief
Providence St. Joseph Medical Center
Burbank, California

Among male multiple myeloma patients, recent anecdotal reports are revealing an even greater prevalence in this select population. The causes are not known, but undoubtedly include the impact of the underlying myeloma, with changes in hormone levels, and the effects of various new treatments, including such drugs as thalidomide. Thalidomide can cause a side effect known as neuropathy, which typically leads to problems of sensation that can range from numbness to muscle cramping and pain. However, men taking thalidomide generally do not report problems of penile sensation, but rather can experience difficulty attaining and maintaining erections.

Fortunately, a variety of treatment options exist for the treatment of ED. The relatively recent introduction of a new class of medications known as PDE5 inhibitors (Viagra®, Levitra®, Cialis®) has transformed ED from a condition that was difficult to treat, to one that is more often treatable. PDE5 is an enzyme that effectively causes the erectile bodies inside the penis to contract and therefore precludes a normal erection. Thus, by inhibiting PDE5, the erectile chambers can dilate and engorge with blood to allow for a complete erection. Viagra is probably the best-known PDE5 inhibitor since it was the first drug of this class to be launched. Patients should take this medication preferably on an empty stomach since food will impair its absorption. The peak time of action is roughly 2 hours after taking the drug, so a man will need to anticipate his sexual activity. Similarly, Levitra also has a peak time of action at approximately 2 hours after taking the drug. However, unlike Viagra, a full stomach will not impair absorption of Levitra. The most recent PDE5 inhibitor introduced is Cialis, which remains effective for up to 36 hours. This means that, with sexual stimulation, a man can have an erection anytime within the 36-hour window. Indeed, all of these medications require some form of arousal or foreplay for an erection to be achieved. As with all mediations, PDE5 inhibitors can occasionally cause side effects, including nasal congestion, visual changes, and rarely, muscle aches. Because the PDE5 inhibitors are systemic drugs, patients should check with their doctors about both drug interactions and other medical considerations. For myeloma patients, underlying kidney impairment will require appropriate dose adjustment.

Prior to the introduction of PDE5 inhibitors, the treatment of ED was more limited. Many of these older treatments are still useful, however, since some men cannot tolerate the newer oral drugs or may need some form of combination treatment. Caverject® is a medication that is injected directly into the side of the mid-shaft of the penis through a very fine needle. Muse® is a similar medication that is inserted via a small pellet into the urethral meatus, the small opening at the tip of the penis through which urine exits. Another option is the vacuum erection device, or VED. This method creates a vacuum with a plastic cylinder that is placed around the penis such that blood is drawn into the erectile chambers and trapped to cause an erection. There is a variety of other older methods that may offer benefits to patients who cannot tolerate the newer treatments.

The good news for patients is that there is a wide range of treatment options for ED. Patients should feel comfortable discussing this issue with their physicians and have confidence that very likely there is a medication that will alleviate this condition. MT

IMF HOTLINE COORDINATORS ANSWER YOUR QUESTIONS

The IMF Hotline 800-452-CURE (2873) is staffed by Nancy Baxter, Debbie Birns, and Paul Hewitt. The phone lines are open Monday through Friday, 8am to 4pm (Pacific Time). To submit your question online, please email TheIMF@myeloma.org.

What is the difference between the terms "myeloma" and "multiple myeloma?"

There is no difference between the two terms and they are used interchangeably. In the late 19th century, the term "myeloma" was used to indicate the disease, which is derived from the Greek words "myel" (meaning "marrow") and "oma" (meaning "tumor"). Because the malignant plasma cells almost always occur in more than one location, the term multiple myeloma is often used.

My grandmother died of multiple myeloma and now my dad has been diagnosed with this disease. Is myeloma hereditary?

There is only a weak family tendency to develop myeloma. Approximately 3-5% of patients with myeloma give a history of myeloma or a related condition within the extended family. Thus far, no specific gene has been linked to this myeloma tendency. When family members get their annual check-ups, make sure that the physicians know about your family medical history. If standard laboratory blood work indicates an increase in protein, the doctor will have a note in the medical chart so that any protein increase is properly evaluated.

Debbie Birns

The small town I grew up in has had many people diagnosed with multiple myeloma. How can I go about finding out if this town has a cancer cluster?

According to the excellent fact sheet on cancer clusters from the National Cancer Institute (NCI), cancer clusters are difficult to prove. A suspected cluster is more likely to be a true cluster if it involves:

- A large number of cases of a specific type of cancer,
- A rare type of cancer,
- An increased number of cases of a certain type of cancer in an age group that is not usually affected by that type of cancer.

If you suspect that your home town may, indeed, have a myeloma cancer cluster, there are a number of places to seek information and to report your concerns. Visit the NCI website at http://cancer.gov, the National Center for Environmental Health website at http://cdc.gov/nceh/clusters, and the National Institute of Environmental Health Sciences website at www.niehs.nih.gov. The NCI's Cancer Mortality Maps and Graphs website provides interactive maps, graphs, text, tables, and figures showing geographic patterns and time trends of cancer death rates for the time period 1950-1994 for more than forty cancers, including multiple myeloma. You may report your concerns to your local health department, which will then refer you to the state health department if necessary. Most states have central registries that collect data on cancer incidence.

My doctor mentioned something about a "monoclonal" protein. How does that relate to plasma cells, which I read is the cell affected by myeloma?

Your question goes to the heart of what myeloma is. First, it is true that myeloma is a disease of malignant plasma cells (it is sometimes called a "plasma cell neoplasm"). It is the job of healthy plasma cells to make immunoglobulins (antibodies) which move through the bloodstream to help the body get rid of harmful substances. When the plasma cells become cancerous, the body keeps producing more and more of these cells. Because people with myeloma have an abnormally large number of these identical plasma cells, they also have too much of one type of immunoglobulin. The characteristic property of myeloma cells is the production and secretion (or release) of monoclonal protein into the blood and/or urine. Monoclonal protein is also called M-protein, myeloma protein, para-protein, or protein spike (because of the way it appears on protein electrophoresis, a laboratory technique). These monoclonal proteins have lost their normal antibody function and it is the production of these monoclonal proteins that causes many of the problems for patients. MT

BLOOD TESTS

Susan J. Leclair, PhD, CLS(NCA)

There are a number of factors that are likely to increase your comfort with a medical test. Understanding **why** a test has been ordered for you can improve your attitude toward the procedure. Knowing **how** it will be conducted can help you feel more in control of the situation during the test. Understanding the concept of reference ranges can help you process **what** is garnered by the test.

Before Your Blood Draw

- Blood drawing is called phlebotomy.
- Ask your health care provider to explain the reasons for your test and how the test will be conducted.
- On the day of the phlebotomy, prior to the test, drink lots of fluid.
- Some peole have veins that are quite prominent and large. Others, unfort u-nately, do not. If you are one of the peo-ple who seems to always have problems with phlebotmy (drawing of blood from a vein), then one way to increase the chances of success is to increase the size of the veins. And that is esier than it sounds. Prior to the phlebotmy, wet a paper or cloth towel with warm water and place it on the arm site. This is more convenient than keeping your arm under the water faucet but the the running water is actually a little better since it also applies some pressure.

Susan J. Leclair, PhD, CLS(NCA)
Chancellor Professor
Department of Medical Laboratory Science
University of Massachusetts Dartmouth
Dartmouth, Massachusetts

- Tell the phlebotomist (the person drawing the blood) that you will allow **one** attempt and that if that attempt is not successful, you will require a more experienced person to perform the blood draw.
- Tell each phlebotomist where the last successful blood draw attempt was and point to that site.

Technique for Blood Draws

- The tourniquet can be drawn as tightly as you can stand it but cannot be left on for a prolonged period of time. Usually, 1 to 2 minutes is tops. After that, there are both chemical and cellular changes that alter test results.
- Don't let the phlebotomist slap the site. This increases inflammatoryresponses and interferes with coagulation testing.
- Again, if you know that you have difficulty with the collection of blood, ask that the smallest needle possible be used. The smallest needle that can be used to collect a blood specimen that is not hemolyzed is a 23-gauge butterfly needle. However, when myeloma protein levels are high, a larger gage needle may be required.
- When you make a fist, don't do it too tightly. A firm fist rather than an overtight one is best. One of the more frustrating things for phlebotomists is that sometimes veins will "roll" because there is not enough supportive tissue to keep them in place. They can put the needle in at the exact place they saw the vein but it "rolls" an inch or more to the side. This occurs more frequently when fists are overtight than when they are a little more relaxed.
- Don't keep flexing your arm muscles. It too alters chemical balances which could skew your test results.
- If your internal venous pressure is too low to withstand the force of the vacuum in the collection tube, the vein will collapse on itself only to re-establish itself after the vacuum is withdrawn. In that case, ask that the specimen be drawn either through a syringe or in a pediatric tube.
- If you find yourself getting overly anxious, tensing your muscles, or becoming faint, soothe yourself with the following techniques:

1. Take slow breaths, counting to 3 as you inhale through your nose and to 6 as you exhale through your mouth. If you start to feel lightheaded, slow down the count.
2. Consciously make your muscles relax and feel loose.
3. Fix your gaze on a focal point or close your eyes and envision a pleasing image.

Reference Ranges

The interpretation of any clinical laboratory test involves comparing the patient's results to the test's "reference range." Reference ranges are highly complex because they reflect a highly complex world. There can be variations in test results due to collection, storage, transport and preparation techniques, types of instruments used, etc.

Please see next page

BLOOD TESTS — continued

Just as no two automobiles run exactly the same way with exactly with same gas consumption, no two instruments run identically. Instruments age differently depending on use rate, maintenance, stability of electrical source, etc. In addition, there are dozens of reagent manufacturers; each with subtle differences in the composition of the reagents, ranging from minute variation in water quality to different sources of material. There are again dozens of manufacturers which make supporting supplies such as pipets, weigh boats, etc. There may be differences in the plastic composition, the amount of water trapped during processing, the accuracy of their volume makers, etc. Altitude, humidity, and temperature variation all play a part in the pre-analytical phase of testing as well. Particle counters in hematology are quite sensitive to changes in humidity while many chemical analyzers are sensitive to temperature changes. Just as your method of cooking changes at high altitude, people respond similarly to the changes at high levels. Hemoglobin increases as the oxygen percentage in the atmosphere decreases.

There are multiple methods to measure the same analyte. For example, there are a minimum of four different methods for analyzing blood glucose. One method measures glucose and a number of other substances called reducing agents, which include vitamin C. Its reference range is 80 - 120 mg/dL. Another method measures three sugars, one of which is glucose. This is a much narrower range and so the reference range of this method is 70 - 110 mg/dL. A third method analyzes only for glucose and uses an enzymatic method. A fourth method, also used for glucose alone, uses an electrical conductivity measurement. These two glucose-only methods have different reference ranges.

Then you need to look at specimen collection. To continue with the example of blood glucose, capillary blood gives a higher level of glucose than serum. Serum collected in a red-stoppered tube will gradually decrease its glucose level as the cells in the blood use the glucose prior to testing, while a blood specimen collected in a gray stoppered tube will not. If a specimen will be tested within a short amount of time, either collection process is adequate. If the specimen is to be transported or stored, then either the collection tube or a method of stabilizing the glucose is required.

You want the most accurate results possible but is there any difference between a glucose of 110 and 110.0001? There are instruments which will give you extraordinarily accurate results but sometimes that level of accuracy is not warranted. Other methods might lessen a tad on the **accuracy** without giving up the **quality** of the information. You want the earliest possible information but increased sensitivity comes at the price of increased false positives, which give everyone extra stress and increased testing to prove if the result was really clinically important. Besides, the more sensitive the test, the more expensive it is. I might choose the most expensive glucose test if I were in the laboratory at the Joslin Diabetes Clinic, where world class research into glucose management might justify it. I might choose an over-the-counter glucose machine if I were running a cardiac rehab clinic where diabetics might come. Community hospitals tend to have instruments with the broadest level of reliabillity and consistency. Tertiary care centers tend to have instruments with a higher level of sensitivity that might be a little more finicky.

Finally, we get to the important part — the patient population. You are part of a greater population. You do not expect the same results from a group of pediatric patients as from a group of geriatric patients. Reference ranges are developed to reflect the patient population that the laboratory serves. And, since the ranges that are developed are averages, not a definition of "normal," the best way to look at those values is as a reference. Statistics work only on populations, not on individuals, so the best comparison for you is to compare your current results against your own previous reports. Physicians look to these comparisons to give them a sense of change over time. Typically, a change seen in three consecutive tests, or a significantly large change between two tests, is considered reason to re-evaluate the situation. For example, a hemoglobin dropping from 15.0 to 14.8 to 14.4 to 14.0 would be considered significant as would a drop from 15.0 to 13.0 So, a good practice would be to keep track of all of your results on a chart so that you (and your physician) can see the movement on a graph instead of trying to compare individual numbers. **MT**

DID YOU KNOW: What Causes Hyperviscosity in Multiple Myeloma?

Viscosity is the property of fluid to resist flow. In myeloma patients, hyperviscosity (increased serum viscosity) results from increased levels of circulating serum immunoglobulins. The hyperviscosity seen in multiple myeloma is not due to myeloma cells in the blood stream. Proteins do not dissolve in a solution; they form a colloid which suspends the proteins within the moving bloodstream like sediment in a river. The more protein in a liquid, the more likely it is that the liquid will be viscous. The proteins (or protein parts) found in myeloma can vary in size. If IgG, IgE, or IgD are thought of as single units, then IgA is a double unit, and IgM is a pentamer (or 5-unit structure). If you have the entire protein present, hyperviscosity is most likely if you have excess IgM and least likely if you have an excess IgG, IgE, or IgD.

DALLAS PATIENT & FAMILY SEMINAR

Peter R. Tischler

February saw another wonderful visit to Dallas, Texas, by the International Myeloma Foundation. Members of the North Texas Myeloma Support Group were excited to welcome our old friends, Susie Novis, Dr. Brian Durie, Mike Katz, Greg Brozeit, Spencer Howard, Lisa Paik, and Andy Lebkuecher, along with a new friend, Candace McDonald (IMF Associate Director of Development). The IMF brought with them the usual world-class faculty to present to us everything there is to know about myeloma and how to treat the disease. The two-day seminar and festivities were held at the Fairmont Hotel in downtown Dallas.

Candace McDonald welcomes IMFers at the seminar registration desk

As usual prior to the seminar, Dr. Durie joined our support group on the preceeding Friday afternoon, along with Dr. Marvin Stone of Baylor University Medical Center. Given our illustruous guests, the support group meeting drew a crowd of about 140 members. In addition to Dr. Durie and Dr. Stone, the meeting also featured four "Quality of Life"

Andy & Cathy Lebkuecher with Bob & Benetta Tindall

IMF member consults with Dr. Marvin Stone (right)

presentations: Kyphoplasty with Dr. Douglas Won, the Binding Site's Freelite Test with David Smith, Osteonecrosis of the Jaw with Dr. Jacqueline Plemons, and VELCADE with Barbara Baum. All presentations were very informative, very well received, and very much needed.

The Friday night Reception and Welcome Dinner was a wonderful opportunity to mingle with the seminar faculty, IMF Staff, and old friends who gathered in Dallas for the upcoming seminar. And, as always, this was also a great environment to forge new friendships with other myeloma

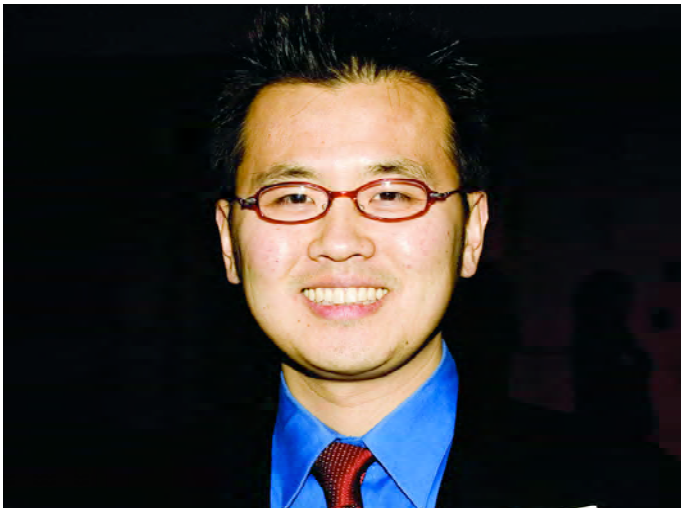
IMF's Lisa Paik (center) with seminar participants

patients and caregivers. There were people from all over the country and even from outside the United States. Anyone who hasn't attended an IMF Patient & Family Seminar is missing an opportunity to learn about how much more our lives can be while living with myeloma.

Saturday was, of course, the main seminar day. It was a LONG day, starting with breakfast at 7AM, seminar presen-

PLEASE SEE DALLAS NEXT PAGE

DALLAS — continued



Dr. Douglas Won

tations all morning (with a necessary mid-morning break), a very nice lunch, and more seminar presentations. Every presentation was followed by a question and answer session in which all the doctors participated. In addition to Dr. Durie and Dr. Stone, we had presentations by Dr. Greg Mundy (myeloma bone disease), Dr. Guido Tricot (transplantation), and Dr. Seema Singhal (relapsed myeloma). After an afternoon break, the faculty members dispersed to separate rooms to hold breakout sessions with the seminar attendees.

Barbara Baum

Greg Brozeit's advocacy update alerted many seminar participants about the serious situation on Capitol Hill regarding funding for cancer research. This is a critical year and Greg wants us to lobby our members of Congress to increase funding and place the proper emphasis on our need for a cure. Greg explained how he will help us do that in the coming months.

The Dallas seminar also included a Patient Panel which featured North Texas Myeloma Support Group members Madron Hartley, Patrick Beal, and Yelak Biru. Each described his experiences with diagnosis, treatment, recovery, and the support group. Everyone appreciated their willingness to share their hope with the rest of us.

Dr. Jacqueline Plemons

Since the seminar took place just two days before Valentine's Day, the IMF raffled off a couple of boxes of chocolate, along with a stuffed frog and a stuffed bear. Ticket sales were brisk as forgetful husbands scrambled to acquire the chocolates. In the meantime, out in the reception area, both the IMF and the North Texas Myeloma Support Group had tables where folks could get some information about our respective organizations. All in all, the big crowd gathered for the seminar had a full and well-rounded experience! MT

Yelak and Loul Biru

COMMUNITY GOALS LEAD TO RESULTS

Greg Brozeit

Are you more interested in myeloma research or cancer research? Is there a difference? What about other issues, like drug coverage and payments for PET scans? Can myeloma issues be separated from cancer issues in general?

What goals should drive cancer public policy? How can those goals be translated into effective cancer advocacy? Are the policy goals different for myeloma advocacy? Should they be?

I remember having lengthy discussions about these questions at the first One Voice Against Cancer (OVAC) advocacy day five years ago. I thought about them again as I returned from the 6th annual OVAC advocacy day on March 14-15, 2005.

At the time, since myeloma is the IMF's primary interest, a number of people didn't quite understand why we were part of a coalition of all the other cancer groups in OVAC. Shouldn't we be focusing on myeloma research instead?

Over time, the importance of the OVAC message became more obvious. As a purely political exercise, it is impressive to have groups representing so many patients come together for a common message in support of funding cancer research and prevention programs. To have cancer advocates focus on federal funding for *all* cancer programs was new. All who attended saw this as a new direction. All who attended realized that their particular cancer would benefit more by joining all cancers in advocacy.

In the past advocates tended to focus on their particular type of cancer. This began to change after the success the community experienced during the period of the doubling of the budget of the National Institutes of Health (NIH). Unfortunately, the meager budget increases that have followed over the past two years and the bleak outlook for funding threaten to break that fragile coalition apart.

OVAC's unity was driven by reality: federal funding for cancer research was not divided up by particular diseases. When recommending its funding for medical research, Congress quite rightly defers to the directors of each of the research institutes and their science-based missions. That is how it should be. The best scientific knowledge should drive the process—not personal or political opinions. Research decisions are supposed to be de-politicized.

Think of the opposite route. Research driven by political pressure is just a bad way to do the public's business—even if you may be a short-term beneficiary. Think about the type of world we would have if politics and public relations trumped scientists when it came to making decisions about the direction of cancer research. We would have a "disease of the month" lottery mentality driving the decision making process. Political support for research would be dependent on a celebrity being diagnosed with the disease.

Politicizing the federal research process also takes away the need for the consensus needed to support the mission of NIH through comprehensive, increased funding for the institutes. Instead, advocates and well connected patrons can focus on small victories that may benefit a group of patients or organizations in the short term. The danger exists, however, that such work will not be integrated into the overall mission of federal health agencies.

That is not to say that there are not a number of programs specific to disease groups that should be and are controlled by Congress. For example, the Centers for Disease Control and Prevention (CDC) cancer programs focus on specific diseases for screening tests and education programs. The danger for members of the cancer community is a focus on these at the expense of building coalitions to support the mission of NIH.

And if any cancer group does not put an increase of funding for NIH at the top of their advocacy agenda, it brings into

PLEASE SEE ADVOCACY NEXT PAGE

Be an Effective Advocate!

Your commitment is needed to help shape public policies to benefit the myeloma and cancer communities. For more information about how to become an effective advocate, please check regular updates in the IMF email newsletter, *The Myeloma Minute* (register at www.myeloma.org) and see the Advocacy section for updates and tips including:

- Timely updates on congressional action impacting cancer issues
- Sample letters to contact your members of Congress and the administration
- Assistance to set up meetings with your members of Congress at home and in Washington, DC
- Suggestions to contact your local media to highlight cancer issues

For more information, please contact IMF Director of Public Advocacy Greg Brozeit at greg.brozeit@sbcglobal.net or 330-865-0046.

IMF Receives Highest Four-Star Rating

Charity Navigator, America's premier independent charity evaluator, helps charitable givers make intelligent giving decisions by providing in-depth, objective ratings and analysis of the financial health of America's largest charities. Charity Navigator awarded The IMF four out of a possible four stars. In earning Charity Navigator's highest rating, the IMF has demonstrated exceptional financial health, outperforming most of its peers in its efforts to manage and grow its finances in the most fiscally responsible way possible. To view Charity Navigator's detailed analysis of the IMF, please visit www.myeloma.org.

IMF Welcomes New MM Support Group

Congratulations to Bill & Helen Krueger and Bob & Margie Russell for getting our first Long Island (NY) Support Group started. At the October 2004 IMF Patient & Family Seminar in Teaneck, NJ, there was a strong feeling that a Long Island group was needed. The closest myeloma support group is more than an hour's drive away. To date, the Long Island Support Group has held three meetings, has advertised in a local newspaper, and is working on getting some airtime on local radio. If you are interested in joining this group, please contact Bill & Helen at 631-581-3226 or Bob & Margie Russell at 631-289-4956.

"Imagine Moving Forward" Wristband

The IMF was founded in 1990 and has been dedicated to improving the quality of life of myeloma patients while working toward prevention and a cure. As the premier organization for myeloma information, our resources are sought out by patients, families, and clinicians around the world. Join the IMF and support our mission of finding a cure for myeloma – give burgundy wristbands to family and friends and "**I**magine **M**oving **F**orward" to a cancer free world! Please order online at www.myeloma.org. The wristbands are $10 for a package of 10.

IMFer Sheila Field Goes Above & Beyond

Sheila Field of Newport Beach, California, was diagnosed with myeloma five years ago. She has been on the frontlines of cancer advocacy ever since. As a result of her hard work, she has had four cancer research grants named in her honor and was recently profiled in the prestigious Orange Coast Magazine. Thank you, Sheila, for your continued support and dedication to the myeloma community.

ADVOCACY — continued

question the seriousness of their advocacy goals. Trying to put political pressure on NIH at the same time that funding is restricted and going down is the equivalent of rearranging the deck chairs on the *Titanic*.

Two years of funding increases below the annual rate of inflation and a president's budget that calls for a 0.35% increase in cancer research are a call for a unified response from the entire cancer and medical research community.

Last year the Senate Appropriations Committee said as much in its comments on NIH funding (Sen. Rept. 108-345):

> "Although it is impossible to predict what cures or new treatments will emerge as a result [of doubling NIH funding between 1998-2003], it is certain that the infusion of new funds during the doubling process helped push back the frontiers of scientific knowledge, while attracting the best and brightest minds to careers in medical research. However, the accumulation of fundamental knowledge for its own sake is of little value unless it finds its way to hospitals and physicians, where it can be put to use in promoting good health or diagnosing, preventing and treating disease. For that to happen requires a robust commitment of resources over a sustained period."

Congress understands how to support research. They just have to make it a national priority. Advocates need to come together to help Congress and the administration understand what is at stake.

It is not unlike the challenge General George Marshall faced in preparing the plan that ultimately won World War II. In reflecting on the challenge to defeat the Axis powers, Marshall's biographer noted "Again and again [Marshall] attempt[ed] to combat what he had come to call "localitis," the tendency of commanders to think their theater the most important, the most in need of more men and materiel and the most difficult in which to fight a war."

As a myeloma community, we understand that the urgency of finding better treatments is like that of fighting a world war. We want our frontline fighters—researchers, doctors, nurses, and administrators—to have the best tools available to wipe out this disease. Researchers understand how much can be achieved soon to impact cancer patients' lives. We just need to give them the tools to let them. But we have to avoid the "localitis" of focusing on our particular disease slowing down national progress. That is the best way for the myeloma community to win—as a part of a broad-based national movement, not apart from it. **MT**

SORORITY RAISES FUNDS FOR A CURE

Denise C. Vidot

During the summer of 2004, my father was diagnosed with multiple myeloma. Myeloma? I had never heard of this disease. And I was not alone. Most people, it seems, have never heard of this little-known cancer. I knew that I needed to do something to change that. If so few people know about this disease, how does one expect to raise money for research to find better treatments or, better yet, a cure?! I was determined to find a way to promote myeloma awareness.

Denise Vidot with her father, Richard Vidot

I am a Sophomore at the University of Miami, on the Pre-Med track, working towards a double major in chemistry and French, and a minor in Biology. I hope to become a rheumatologist. In the Spring of 2004, I joined Lambda Theta Alpha Latin Sorority Inc., a Beta Sigma Chapter, for which I now serve as vice president and treasurer. In part, our mission is "to develop strong Leaders who will then provide and practice political, social, and cultural activities." I knew that I could count on my sisters to help make the myeloma awareness and fundraising project a success. I also contacted Suzanne Battaglia of the IMF and requested the Foundation's assistance.

I organized events at Florida Atlantic University, Florida International University, and Nova Southeastern University. Knowing how hectic campus life is, and how something as basic as food can become an issue, I decided to use the students' busy lifestyle to my advantage. I sold beef patties, a very popular convenience food item. Along with the patties, educational flyers about myeloma were distributed.

Sorority sisters nationwide responded to my awareness project. Together, we reached out to students and faculty. On my campus, a professor who is a myeloma patient thanked us for our efforts and said, "I feel a little better knowing that I am not alone."

Besides raising awareness and funds for research, I learned a lot about what to do (and what not to do!) to make fundraising successful. As a result, I plan to hold future events to benefit myeloma research and awareness. Currently, I am organizing a myeloma walk-a-thon that will take place in the Fall. **MT**

Member Events Calendar

May 21, 2005 Sauk Rapids, MI	**6TH ANNUAL JC GOLF TOURNAMENT** Contact: David Johnson, 952-546-6000
May 22, 2005 Santee, CA	**RIDE FOR THE CURE** Contact: Celeste Jackson, sasqquach@aol.com
May 22, 2005 Louise, VA	**LEONA CRAVOTTA MEMORIAL GOLF TOURNAMENT** Contact: Katelyn Martin kmm9v@cgatepro-2.mail.virginia.edu
June 5, 2005 San Diego, CA	**TEAM MILERS AGAINST MYELOMA** Contact: Suzanne Battaglia, 800-452-2873
July 17, 2005 New York, NY	**MULTIPLE MUSICIANS AGAINST MULTIPLE MYELOMA** Contact: Naomi Margolin, mmamm@aol.com
July 23, 2005 West Hartford, CT	**WAMP SWIM-A-THON** Contact: Liz Stafford, liz.stafford@gmail.com
August 29, 2005 Naperville, IL	**12TH CORPORATE CUP CHALLENGE** Contact: Brad Springer, brad@handheldpower.com
November 28, 2005 Phoenix, AZ	**FALL FLING** Contact: Barbara Kavanagh, BJKavan@aol.com

FUNdraising

You know you want to do something for your community, and the IMF's FUNdraising program can help you. We are ready to provide you with the tools, assistance, and expertise you'll need to make your event a success. We have over 12 years of experience helping members around the world raise money for research and education programs. FUNdraising is fun (get it?) and easy to do, and you'll have the satisfaction of knowing that you made a difference! For information, contact Suzanne Battaglia at 800-452-CURE (2873) or sbattaglia@myeloma.org.

MYELOMA FOUNDATION OF AUSTRALIA INC.

Andy Lebkuecher

In August of 1998, prompted by their health professionals, three couples met at the offices of the Anti-Cancer Council of Victoria (Australia), to discuss ways of encouraging the government, the universities, the scientists — in fact *anyone* — to dedicate time and money to multiple myeloma research.

Robert Moran, President of MFA,
with his wife and Committee Member Glenys Moran

The couples were Robert and Glenys Moran, Brian and Roslyn Rosengarten, and Donald and Judith Brown. Pat Dobson, a research and development officer at Anti-Cancer Council of Victoria, facilitated the introduction. At that time, very little scientific research in Australia was being directed towards the prevention and cure of this troublesome disease. So the six members embarked on a mission to correct this state of affairs. This lead to the birth of Myeloma Victoria, which later became the Myeloma Foundation of Australia Inc. (MFA).

MFA members Melinda Williams, Kaye Hose, and Brian Rosengarten

From its inception, the organization has concentrated its efforts on providing benefits to its members in the areas of information, support, research, and education. In September of 1999, with partial funding from Novartis Pharmaceuticals, their first myeloma support nurse, Jo Wilson, was hired. In February of 2002, Jo was succeeded by the present nurse, Kaye Hose. Kay is on duty at the MFA answering questions during office hours each Thursday and Friday. She can be reached at 1-800-444-996 (Australia only) or khose@myeloma.org.au.

The MFA has started a program called Myeloma Education in Regional Areas (MERA), which ministers to many cancer patients, particularly those who are affected by lesser-known cancers. Over the last two years, the concept has been successfully demonstrated by the association.

250 participants attend a myeloma seminar Down Under

The MFA has hosted many well-attended educational seminars, workshops, forums, and fundraisers. The MFA also publishes a quarterly newsletter, MyeVic, which can be obtained by an annual subscription of AU$10. **MT**

NOTE: To contact the Myeloma Foundation Of Australia Inc., or one of the other myeloma support groups located throughout Australia, please see page 25. For information about myeloma support groups in the US. A comprehensive list of myeloma support groups worldwide can be obtained at the IMF website at www.myeloma.org or by calling 800-452-CURE (2873). Andy Lebkuecher can be reached at 678-546-3045 or imfsupport@charter.net.

TRACKING MY NUMBERS

Dennis McClure

I grew up on a farm near the small town of Eaton, Ohio, which is 25 miles west of Dayton. My parents always assumed I would eventually take over operation of the two family farms, but I had other ideas. I have always had a strong curiosity about how things work and therefore an interest in science in general and chemistry in particular. I earned a scholarship to attend Manchester College in northern Indiana, where I earned a BA in Chemistry and a full National Science Foundation Fellowship to attend graduate school at Indiana University in Bloomington. I was in a PhD program but the late 1960s were a bad time to be looking for a first job. I knew doctoral students a couple of years ahead of me who were not getting job offers, let alone something they wanted to do. For that reason, I stopped with a MS in Chemistry and earned a teaching assistantship to complete an MBA from the Indiana University School of Business. While at Indiana University I met my wonderful wife Margaret. We have now been happily married for 33 years.

Dennis McClure

In 1971, I went to work for a Johnson & Johnson company that made reagents for hospital testing and human injectable medicines derived from human blood serum. At this company, I had an opportunity to learn all about human antibodies and tests like Serum Protein Electrophoresis, which are now used for monitoring myeloma patients. In 1981, I went to work as Vice-President of Operations at Ricca Chemical Company in Arlington, TX. I was in charge of all of the technical parts of the company including manufacturing, packaging, quality control, quality assurance, research & development, and regulatory affairs.

In 1984, at work I spilled on my toes a chemical solution that contained an organic amine carcinogen that will absorb directly through the skin in its pure liquid form. Organic amines are often carcinogenic since they tend to bind tightly to DNA inside cells. Other acid ingredients in the solution formed chemical burn blisters on my toes requiring medical attention. My doctor documented my exposure to a carcinogen (o-Toluidine) at the time of the accident. While no one can prove one way or another if this event was the "smoking gun" that resulted in my Monoclonal Gammopathy of Undetermined Significance (MGUS), my oncologist says that this length of time is consistent with how high my abnormal monoclonal antibody concentration has risen to. This is an indirect measure of how many genetically abnormal plasma cells (that make abnormal monoclonal antibodies) remain alive in my bone marrow.

My MGUS was found as a fluke during an annual physical in May, 1993. My total serum protein was slightly above the top of the normal range for that test and soon went back to normal. Otherwise, I still would not know that I have MGUS since I am still symptom free. A serum protein electrophoresis test found an abnormal protein band (M-spike) during the test. This led to additional tests, including a bone marrow biopsy that produced the MGUS diagnosis with abnormal IgG Kappa light chain antibodies being produced. The IgG M-spike and quantitative IgG immunoglobulin monitoring test results have slowly but steadily increased: my M-spike was 0.8 g/dL in June, 1993, and has increased to 2.3 g/dL by February, 2005. My normal IgA and IgM antibody concentrations have been slowly depressed to about 18% of where they were in 1993. No bone lesions have been found so far in full skeletal x-ray, MRI, or radioactive bone scans.

I have had very few previous health concerns. I have always had as healthy a diet as anyone else I know and have never smoked. I have always gotten regular exercise and annual physical exams. My father lived to almost 91. My mother is still alive at 93. The only previous cancer in my family was my sister's cervical cancer, which is cured. Growing up, my family always had a couple of acres of vegetable gardens on the farm so I acquired a joy for growing things. Ever since, I have had my own vegetable garden but I never use any pesticides except for fire ant powder in the lawn areas. We do not use any pesticides in our house.

PLEASE SEE NUMBERS NEXT PAGE

NUMBERS — continued

At the February 2005 IMF Patient & Family Interactive Seminar in Dallas, it was stated that about 1% per year of MGUS patients progress to active myeloma. So, after 12 years, an MGUS patient has about a 12% chance of developing active myeloma. But, in the Spring of 2004, my oncologist said that I had moved into the Smoldering Myeloma stage and he was ready to start my first treatment with thalidomide and dexamethasone. Based on information I had learned, I told my doctor that my test results indicated that I was still in the MGUS category and shouldn't yet be treated with anything. I wanted a second opinion. My doctor consulted with Dr. Raymond Alexanian (his mentor) at M.D. Anderson Cancer Center in Houston, Texas, and with Dr. Bart Barlogie (a former classmate) at Myeloma Institute for Research and Therapy in Little Rock, Arkansas. They both agreed that I was still at the MGUS stage and I should not yet be treated.

Being informed about my disease has saved me starting treatment that would begin development of treatment resistance prematurely. Sometimes, prior treatments disqualify you from some clinical trials, and even some treatment options. By not starting unnecessary treatment prematurely, I kept all of my future treatment and possible clinical trial options open. I feel very fortunate to be able to monitor my condition, stay up with new developments and treatments, and to have plenty of time in a non-crisis environment to develop an optimum treatment strategy, if and when the time comes to begin treatments. The IMF and the North Texas Myeloma Support Group (NTMSG) have been a big educational help and a new social outlet for me. Both organizations are noted for their strong emphasis on education. I already knew a lot from my own efforts, but there was a lot of extremely valuable information that I learned from other myeloma patients' actual experiences.

Marcia Sawyer, one of the NTMSG leaders, found an American Heart Association website that allows patients to organize their test results for Cholesterol, Blood Pressure, and Glucose. Marcia remembered that I already had my own system for charting my test results and suggested that we try to develop a similar tracking tool for myeloma patients' use. Yelak Biru, NTMSG's technical guru, volunteered to collaborate on this project. We wanted to create a test tracking system that was easy to use by people that are not particularly familiar with using computers, generalized enough to cover nearly all of the laboratory tests with numerical values done for myeloma patients, and to make the important test history trends more easily visible for all potential users. We presented a preliminary tracking tool design to our support group members and asked for feedback during a two-month trial period. We incorporated one suggestion in the final design. The final tracking tool has now been in use by local support group members for several months with no problems being reported.

The NTMSG Testing History Template is designed to help myeloma patients organize and record test results. This tool then creates trend line charts to make the test trends for the myeloma monitoring tests more visible and obvious. Often times, the trends for myeloma monitoring tests and response to treatments are more important than the absolute numerical values of those tests. The charts included in the NTMSG tracking tool make the trends for each significant myeloma monitoring test easy to visualize for patients and caregivers. Because many physicians do not have the luxury to spend extended time with each patient, I have found this tool to be a very efficient way to communicate with my doctor. It refreshes his memory about details of my case, saves him time in going back through my test records, and makes the test trends very easy to follow so that optimum decision-making is more likely to result. My oncologist liked this tool well enough that he plans to customize and use this tool to monitor all of his myeloma patients. I am happy to share the availability of this tracking tool with myeloma patients who are not already "tracking their numbers."

A Picture is Worth a Thousand Words

To view the NTMSG tracking tool online, please visit http://northtexas.myeloma.org, click on Myeloma Resources, and then on Testing History Template. To utilize this tool, save the template to your computer. (Your data will be stored on your computer so no one else has access to it.) Fill in your laboratory test results on the Test Data Entry worksheet. Other significant details may also be recorded at the bottom of the worksheet. Then the most significant laboratory test data is displayed on four Test History Charts. Charts 1 and 2 display the trends for the tests used in the Durie-Salmon Staging System and the International Prognostic Index. Chart 3 displays some of the Prognostic Indicator Tests. Chart 4 displays Additional Tests For Myeloma Monitoring. Directions For Use describe how to customize these tools to better fit each patient. **MT**

NOTE: Questions, suggestions, and problems related to this tracking tool should be emailed to Dennis McClure at mmcclure@ix.netcom.com.

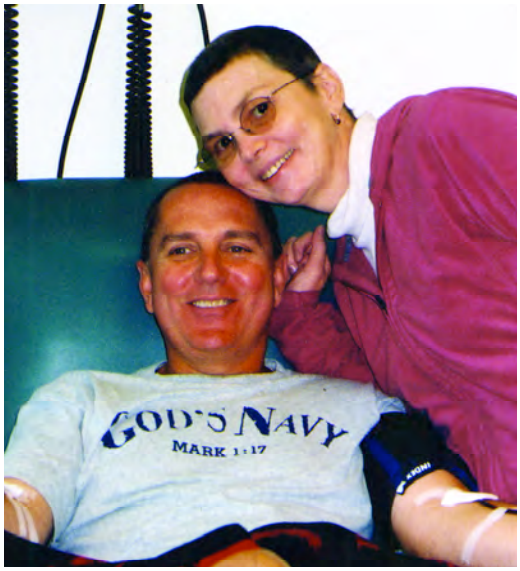
MY NEW FIRST BIRTHDAY

During my treatment for multiple myeloma that began in December of 2001, I made some promises. If I survived, I would take care of my emotional self as well as I was caring for my physical self. For me, that meant a little less work and a lot more play. Part of my personal therapy was to say yes to participating in a continuing education class at the University of Wisconsin—Milwaukee. It was a class that did not earn me any credits, nor did its completion apply toward professional certification of any kind. It was a class just for fun. The class, Telling Tales: Sharing the Stories of Our Lives, set before its participants the task of taking a personal and life-changing event, and in six weeks turning it into a story that would be told in eight minutes. On February 14, 2005, along with 16 other people, I stood on the stage at Vogel Hall in Milwaukee's Performing Arts Center as we claimed ourselves before an audience of nearly 500! The following is my story, and I think in many ways it is everyone's story.

Mary Burke

Pregnancy and malignancy have much in common. I feel eminently qualified to discuss both states simply because I have experienced them both... in a big way. It may seem an odd premise, however, if you think about it, you can recognize the striking similarities.

- Both create unplanned and often unwanted, physical and emotional changes.
- With each, something foreign is growing inside you that somehow you must claim as your own.
- Well-meaning acquaintances drone on about how each brings dramatic changes, "poor dear", over which you will have no control.
- And the outcome of each... well, there are those statistics but you can never really be sure just what the future holds.



Mary and her brother Bob during stem cell harvest at the Blood Center in Milwaukee, September 2002

Now I have never been known to do things in a normal or simple way. My first pregnancy... multiple birth, identical twins... the odds of that are 3 in 1,000. My malignancy... multiple myeloma—cancer of the bone marrow... the odds of that are 3 in 100,000. A little bit pregnant? No such thing. A little malignant? Well, by the time I was diagnosed there were 75% plasma cells in my bone marrow busily fighting infection that didn't exist. Runaway cells that were munching their way through my red cells faster than I could produce them... killing my kidneys and dissolving my bones. Incurable, debilitating, devasting. Quite obviously, my friends, that is where the comparison ends.

But it is only the beginning of my story. Because, you see, this story is not intended to compare, or even contrast. Instead it is a story of how, somewhere in the human condition we, all of us, learn to survive no matter what life gives us and that the quality of the outcome is what we make it.

Just a little over three years ago, after months of unrelenting pain, broken ribs, and compression fractures in my spine came the diagnosis... and along with it a very poor prognosis. Even with conventional treatment, I had statistically about 24 to 36 months to live. I soon learned that the treatment, intended to provide quality of life for whatever short time I had left, would at times seem worse than the disease itself. But I thought maybe I could buy some comfort and with a little luck some time. After all, science might come up with new and better treatments in the future, maybe even a cure, if I could hold on.

So I started that journey and began to live "one day at a time." I have long embraced the philosophy that in the midst of every crisis, there is great opportunity. This was no exception. I even amazingly found myself saying cancer is a gift. And there were many gifts. I was given the gift of patience. I learned about courage and hope, faith and the human spirit. And I learned a meaning of love that I never knew existed. I was granted the opportunity to view my world and all those incredible people in it through a new and much gentler lens. Oh, and I also learned that my

PLEASE SEE BIRTHDAY NEXT PAGE

BIRTHDAY — continued

mother was right. You ought to keep your room clean and your house in order... and you should always, always wear clean underwear.

But then came another kind of opportunity. The future was now. I learned of a clinical study that would happen right here in Milwaukee at the Medical College of Wisconsin. Doctors would transplant blood forming stem cells from a healthy donor into the bloodstream and thereby the bone marrow of multiple myeloma patients just like me. As close to cure as we have, they said. The theory of this experiment was that the transplanted cells would create a healthy immune system in the recipient. The treatment would be difficult. You see, for one's body to accept a new immune system, you had to start without one. It was tough, but I was tougher and I was a candidate for this trial. It was not, of course, without risk. My body could reject the donor cells and without an immune system I could die, sooner rather than later. So much for 24 to 36 months. And the other catch. I needed a DNA matched sibling donor and my parents, it seems, believed in birth control. There were only two of us. I had just one brother. And I knew from my high school science class that the chances of any one sibling being a match were around 25%. I also had heard of people who were looking for a sibling match who had 6, 7, even 8 brothers and sisters, none of whom matched.

Mary and her boys
March, 2004

Well, I had to make a very difficult decision. Just how do you decide whether to fight a fight like that or let go and let God? But, I had some help...

- There were unbelievable friends and family who fed, nurtured, supported, and believed in me. They absolutely refused to let me give up.
- And I had three incredible sons: Matt, Alex, and Tim (yes, there was another pregnancy). And those boys believed that I was invincible. Supermom. There was just no question in their minds that I would beat this.
- I had a husband and an ex-husband who said, "Don't think you're going anywhere—we're not through with you yet!"
- And I had a brother, *one brother*, who was a perfect DNA match.

So I put up my dukes and said bring it on... and bring it on they did. The best researchers in the nation and world class medicine... and they were hurting me bad. I took up residence in the bone marrow transplant unit at Froedtert Hospital and they pumped substances into my body that are closely related to those used in chemical warfare—talk about weapons of mass destruction! I lost my sense of smell and taste, I lost my hair, I lost some weight, I lost my dignity, I even lost my spirit for a time, but finally I was ready. A shell of myself, really. My brother's blood producing stem cells were dripped into my bloodstream and took up residence there. The builders of red cells, white cells, and platelets. Then I began to get better. My blood counts went up and in a couple of months I had 100% of my brother's XY chromosomes in my bloodstream. Boy cells, imagine that! And now, 38 months after that diagnosis I have a new immune system and a new point of view!

Oh, that comparison??? If, somehow, by the grace of God you survive pregnancy or malignancy, the result is the same. It is the miracle of life. By the way, in October a little over two years ago we celebrated Matt and Alex's 22nd birthdays and that same month, I am happy to report, one year post transplant we celebrated my new first birthday. MT

Myeloma Support Groups

AUSTRALIA

Adelaide
Contact: Robyn Brady 08-8252-605, Tina Hunter 08-8262-8520

Albury
Contact: Wilhelmina Barlow 02-6025-7204

Barwon
Contact: Neil Chasemore 61-0352-5319-59, Karen Todd 03-5226-7792 or 5226-7525

Brisbane
Contact: Dean King 07-3840-3844 or 1-800-804-4444

Myeloma Foundation of Australia Inc.
Contact: Kaye Hose 1-800-444-996

New South Wales
Contact: Nigel Wace 02-6282-1382, Kevin Chapman 02-6254-1106.

North Queensland
Contact: Joanne Kanakis 07-4727-8000

South Australia
Contact: Ian Driver 08-8370-7911

Sydney
Contact: Shaun Raby 02-9600-9032

Tasmania
Contact: Jane Anderson 0413-786-228

For questions or assistance related to your myeloma support group, please contact Andrew Lebkeucher, IMF Director of Support Groups, at imfsupport@charter.net.
If you would like to see your support group profiled in Myeloma Today, please contact Marya Kazakova, IMF Publications Editor, at mkazakova@myeloma.org.

Letters to the IMF

Education

I have just got back to the office from a talk that Dr. Brian Durie gave to our Oregon support group. He spoke for almost two hours, answered all the patients' questions, was so gracious, so informative, and so inspiring. We had around 70 people attend. Some of them drove for hours from other parts of the state to hear him speak. I cannot praise the IMF enough in terms of what you do to help myeloma patients. I'm so very grateful to you all on behalf of our patients here. We realise what a privilege it is for us to have Dr. Durie speak! Thank you for what you do - you are a lifeline for our patients, and I know how much they appreciate it.

Sue Sumpter RN, MS

IMF's 4-Star Rating by Charity Navigator

Just wanted to send congratulations to all the staff at the IMF for the prestigious and well-deserved recognition from Charity Navigator. We knew right from the beginning that the IMF is an exceptional organization that is totally dedicated to helping to ease the lives of all patients with multiple myeloma. I feel such a fondness for the whole organization. I don't know how I would face this disease without all of you. Many thanks!

Carole S. Giampalmi

IMF 14th Anniversary Gala

It was a splendid event! The huge amount of work you put into it showed in big and small ways. The table decorations were totally beautiful; the silent auction choices were awesome; the appetizers were great; and the dinner was wonderful. Everyone came dressed to suit the occasion and the place. Elegance was everywhere!

Thanks for choosing the Los Angeles support group as an honored recipient. There was joy in seeing the fine video of members of the support group commenting in substantive ways about the meaning of the group for them. And so many nice support group members attended the event.

Thanks so much for all you do!

Janet Johnson

ment. He advised the supplemental use of oral vitamin D and calcium with the administration of bisphosphonates to optimize the patient's bone health. A possible risk of bisphosphonate use is osteonecrosis of the jaw. Treatment options for osteonecrosis include good oral hygiene and intermittent antibiotic use. Dr. Berenson cautioned against surgical intervention. In closing, he compared the benefit to risk ratio of bisphosphonate use.

• **Dr. Graham Jackson** reviewed major factors contributing to renal impairment in MM, as well as conflicting evidence about the use of plasma exchange to improve renal function. He presented a new study to determine whether plasmapheresis affects overall survival and quality of life.

• **Dr. Heinz Ludwig** discussed the prevalence, pathogenesis, and treatment of anemia with erythropoietic agents. Anemia is a common complication and has a higher prevalence in MM than in patients with solid tumors. He stated the main goal of the European Cancer Anemia Survey (EACS) is to analyze the incidence of anemia. Dr. Ludwig recommended that treatment options such as erythropoietic agents, transfusion, and iron supplements should be based more on the patient's individual symptoms and less on hemoglobin levels.

Evolving Myeloma

• **Dr. Dalsu Baris** discussed the epidemiology of MM. The highest risk of MM in the USA is among Blacks, with the lowest risk, in both Asia and the USA, among Asians. Mortality is higher in Blacks versus Whites, and in males versus females. She presented data showing an increased risk with increased age. Risk factors are unclear but are related to exposure to ionizing radiation, solvents, and agricultural and farming occupations. Studies also suggest an association of MM with low socioeconomic status and obesity. A recent study conducted among women showed the risk was higher for subjects with less than a high school education and those in the lowest economic bracket. Risk was increased with an increased body mass index. Although it appears that environmental factors may have a part in the pathogenesis of MM, further studies will need to be conducted to identify exact environmental agents and genetic factors.

cations. He looked at B cells to find out whether those cells contain the same genetic memory that is seen in MM plasma cells. B cells do not have the key characteristics of plasma cells that develop into malignant MM plasma clone cells.

Autologous Transplantation

• **Dr. Michel Attal** presented an update on the Intergroup Francophone Du Myelome (IFM) study on maintenance treatment with thalidomide and pamidronate after HDT[4]. Based on interim analysis, thalidomide was found to significantly decrease incidence of progression, improve PFS[6], and significantly improve 3-year PFS. This benefit was mainly observed in patients with one adverse prognostic factor. Pamidronate was found to significantly decrease the 3-year risk of bone events. Longer follow up is required to further assess outcomes.

• **Dr. Bo Bjorkstrand** provided an overview of the European Group for Blood and Marrow Transplantation (EBMT) and the history of data collected on allogeneic and autologous transplants since 1983. He highlighted the value of the registry's continuous monitoring of transplant activity, which shows information on trends and changes in treatment methodology.

• **Dr. Mario Boccadoro** reviewed findings from the Italian study. He stated that intermediate-dose melphalan followed by ASCT[7] constitutes a more effective first-line regimen than standard treatment of melphalan/prednisone in those aged >65 years, improving response rate, EFS[8], and overall survival.

• **Dr. Bart Barlogie** reviewed data supporting the superiority of total therapy 2 (TT2) versus total therapy 1 (TT1), with improved CR duration and doubled EFS. TT 3, a successor protocol including bortezomib with DT PACE, shortens the induction phase to 2 cycles to allow for completion of tandem transplants. He cautioned that the study is ongoing and that results will be discussed at future meetings in 2005.

• **Dr. Jean-Luc Harousseau** focused on the benefits of double versus single ASCT. Results from several studies are showing a trend towards significant benefits in EFS and OS with double ASCT. He commented that patients with adverse prognostic factors have a poorer outcome and the only factor that can predict the impact of a second transplant is the result of the first transplant. Longer follow up, as well as future trials with the use of novel agents, are needed before drawing conclusions.

Bone Disease in Myeloma

• **Dr. David Roodman** presented on the pathogenesis of bone disease. MM cells are involved in both the destruction of bone tissue and in the prevention of the repair of bone tissue. MM patients produce molecules that stimulate osteoclasts (cells that break down bone tissue) and inhibit osteoblasts (cells that build bone tissue), resulting in the severe bone disease.

• **Dr. Gregory Mundy** discussed how MM cells influence bone destruction by inhibiting formation of bone and increasing resorption of bone. VELCADE® is successful in the treatment of MM, causing MM cells to behave in a more normal manner. Dr. Mundy and associates suggest that VELCADE may also be helpful in stimulating bone formation, thus possibly acting as a treatment for MM bone disease. They are conducting experiments to clarify if VELCADE can both limit tumor burden and repair bone destruction.

• **Dr. Peter Croucher** noted how, to date, only bisphosphonates are used to treat bone disease in MM. Research in animal models shows differences between the various bisphosphonate agents. Dr. Croucher suggested that treatment with bisphosphonates may have an anti-MM effect that may be mediated in part by inhibiting bone resorption.

• **Dr. Joshua Epstein** focused on the mouse model in tumor microenvironment. As patients progress from MGUS to symptomatic MM, the rate of their bone turnover changes. Epstein and associates looked at whether changes in the bone marrow were related to MM and whether the changes were necessary for the survival of MM cells. Epstein and colleagues note a 20% to 30% decrease in tumor burden being associated with an increase in bone density. They continue to investigate the relationships between MM cells and bone tissue.

April 12, 2005

New Therapeutic Agents

• **Dr. Paul Richardson** reviewed preclinical and clinical trial results of VELCADE®, the first drug in the class of proteasome inhibitors, which increases chemosensitivity of MM cells and decreases chemoresistance and apopotosis. He then discussed the results of APEX, a key international Phase 3 trial. Dr. Richardson provided insights into future combination therapies of novel agents and developing therapies which have the goal of enhancing effectiveness and minimizing toxicity. In his second presentation of the day, Dr. Richardson described the preliminary results from a Phase 1 study initiated to determine the safety and efficacy of VELCADE in combination with lenalidomide (CC-5013, Revlimid®) in patients with relapsed and refractory MM. He indicated that the future trials will include a Phase 2 study in relapsed/refractory patients and a Phase 2 in newly-diagnosed MM patients.

• **Dr. Donna Weber** discussed lenalidomide and other IMIDS. She reviewed the benefits and limitations of thalidomide therapy to establish the rationale for the development of lenalidomide. Dr. Weber ended her presentation by identifying future trials planned for lenalidomide therapy.

• **Dr. Mohamad Hussein** discussed the use of pegylated doxorubicin in combination with immune modulators. Results from studies using Doxil, Vincristine, and reduced-schedule decadron showed a significant reduction of angiogenic activity. Dr. Hussein pointed to the use of prophylactic supportive care to manage side effect in this regimen.

• **Dr. Kenneth Anderson** reviewed new directions in the treatment of MM. New therapies are now targeting three areas: the MM cell and bone marrow microenvironment, the

PLEASE SEE SYDNEY, PAGE 28

SYDNEY — continued

MM cell, and the bone marrow microenvironment. The hope is that combining novel drugs will overcome resistance and reduce side effects. He positioned MM as a model for new drug development in the evolving paradigm targeting both the tumor cell and bone marrow microenvironment.

Tumor Microenvironment & Angiogenesis

• **Dr. Melissa Alsina** discussed the influence of the tumor microenvironment on drug response and drug resistance in MM. Drug resistance is accommodated by multiple mechanisms, including increases in DNA repair, altered drug targets, decreased drug accumulation, decreased drug uptake, metabolic changes in cells, and increased efflux of drugs from cells. Inhibiting interactions between the microenvironment and tumor cells may enhance therapeutic effect of drugs.
• **Dr. Vincent Rajkumar** provided an overview of angiogenesis. Potential therapies targeting angiogenesis include antibodies that inhibit angiogenesis and molecules that inhibit specific growth factors. Recent data suggest that inhibition, or lack of inhibition, of angiogenesis may be the key difference between MGUS and MM cells. Dr. Rajkumar's group recently characterized the angiogenic inhibitory activity of MGUS, SMM, and MM cells. They are continuing to investigate the inhibition of angiogenic activity in the various cell types involved in MM.
• **Dr. Guido Tricot** reviewed recent studies on new antiangiogenic agents. No correlation between thalidomide dose and EFS was seen. Commonly observed toxicities were mainly hematological events. These studies suggest that combination therapy may provide the best response.
• **Dr. Ivan Van Riet** discussed the molecules that could control disease development, specifically discussing VEGF and PDGF signaling by RTKI[9]. He showed the ability of MM cells to stimulate angiogenesis and increase microvessel density. The data suggest that RTKIs may be able to inhibit microvessel formation.
• **Dr. Irene Ghobrial** discussed the molecular mechanism involved in homing and migration of plasma cells to the bone marrow. The therapeutic implication is the delay or prevention of disease progression in early MM.

Waldenstrom's Symposium and Myeloma Variants

The focus session presented discussions of Waldenstrom's Macroglobulinemia, amyloidosis, cryoglobulinemia, POEMS, and gammopathy-associated neuropathy.

April 13, 2005

How Do We Use Genomics to Tailor Therapy?

• **Dr. Keith Stewart** discussed specific mutations in MM cells that correlate with the progression of the disease. He suggested that immunohistochemistry testing is an easy way to identify specific genes that may identify patients with a poor prognosis.
• **Dr. Gareth Morgan** reviewed the role of the immune system in protecting the body from infection and from toxins which may cause disease and the role of individuals' genes in responding to challenges to the immune system. He also discussed the role of pharmacogenomics in MM.
• **Dr. Brian Van Ness** discussed the development of MM, the progression of the disease, response to therapies related to the genes expressed, and the abnormalities of those genes. The data collected from MM patients by the IMF's Bank On A Cure initiative may provide insight into the correlations between genes and survival by identifying genetic variants that are frequent and correlated with clinical outcomes.
• **Dr. Friedrich Cremer** discussed the biological functions of specific predictor genes that are related to protein and DNA metabolism, cell growth and maintenance, cell communication, response to external stimuli, and cell death.

Autologous Transplatation Reports from Studies

• **Dr. Pieter Sonneveld** presented the updated analysis from the HOVON 24 trial (the Netherlands study), which began in 1995. This trial's objective is to demonstrate superior long-term clinical outcome of double versus single HDT.
• **Dr. Harmut Goldschmidt** analyzed the GMMG-HD2 trial (the German Study), which is evaluating single versus double HDT followed by SCT in newly diagnosed MM.
• **Dr. Joan Blade** presented an update on the PETHEMA/GEM trial (the Spanish study), comparing the efficacy of HDT followed by SCT intensification to the continuation of conventional chemotherapy for patients responding to chemotherapy.
• **Dr. Michele Cavo** offered findings from the Bologna 96 trial (the Italian study), which addressed the issue of single versus double ASCT for patients younger than 60 years of age.
• **Dr. Jean Paul Fermand** represented the MAG group (Myelome-Autogreffe; Paris, France) and presented long term follow up from the studies conducted from 1985-2005.
• **Dr. Anthony Child** represented the MRC (Medical Research Council; United Kingdom) Myeloma VII trial evaluating standard conventional chemotherapy and HDT. He also presented the Myeloma IX study that incorporates high-dose melphalan as the standard component of treatment for patients of all age groups.

Bone & Tumor Microenvironment

• **Dr. Claire Shipman** discussed the interactions between tumor cells and cells in the bone marrow that may influence systems that are involved in the development of bone disease in patients with MM.
• **Dr. Babatunde Oyajobi** discussed the role of MIP[11]-1 in MM bone disease. Data suggest that blocking this chemokine reduces tumor burden, bone lesions, and splenomegaly.
• **Dr. Evangelos Terpos** reviewed the relationship between the probability of survival and expression of RANKL/OPG. He suggested that specific pathways are important for MM survival and for the pathogenesis of bone disease, and that molecules in

these pathways may serve as targets for anti-MM agents.
• **Dr. Erming Tian** reviewed clinical data showing that bisphosphonates stop bone lesions but do not repair bone tissue.
• **Dr. Toshihiro Hashimoto** discussed the ability of MIP- 1a and ß and MM cells to affect osteoclasts and dendritic cells.

Allogeneic Transplantation

• **Dr. Gosta Gahrton** gave a state-of-the-art update on allogeneic transplantation in MM.
• **Dr. Francis Ayuk** presented results of studies looking at allogeneic SCT for MM conducted in the EU.
• **Dr. William Bensinger** spoke about shifting burden from tumor to T cells to ablate disease. Dr. Bensinger and associates adopted a tandem autologus/non-ablative allogeneic SCT strategy in response to poor outcomes observed with other strategies.
• **Dr. Henk Lokhorst** talked about strategies to improve graft versus myeloma and discussed what can be learned from DLI. He then discussed the efficacy of thalidomide treatment after allo-SCT.
• **Dr. Laura Rosinol** discussed the feasibility and efficacy of planned second transplant intensification in patients with MM.

Homing Mechanisms & Signal Transduction

• **Dr. Ivan Van Riet** shared **Dr. Benjamin Van Camp**'s presentation, evaluating cell lines from mouse models and reviewing the mechanism of action of homing to MM cells.
• **Dr. Karin Vanderkerken** discussed the role of receptor pathways in the pathobiology of MM and showed the potential for utilizing receptor pathways in future therapies.
• **Dr. Alan Lichtenstein** discussed the therapeutic implications of AKT kinase in MM. He hopes that future trials will be designed to evaluate pre-treatment AKT as a marker of treatment response.
• **Dr. Martine Amiot** discussed IL-6, a major MM factor that induces the activation of multiple cell survival pathways.
• **Dr. Haiming Chen** discussed how TRAFs may p rovide important clues about MM cell growth, death, and may lead to future clinical applications of novel therapeutic strategy.

Chairman's Symposium

• **Dr. Nikhil Munshi** discussed specific genetic instability in MM. Results from experiments are being used to study the genetic events that lead to the development of MM.
• **Dr. Johannes Drach** discussed data supporting a novel aspect of bone marrow angiogenesis in MM cells.
• **Dr. Catherine Pellat-Deceunynck** reviewed CD11 and CD45 as hallmarks of proliferating MM cells.
• **Dr. Brian Van Ness** addressed the development of mouse plasma cell tumor panels to show genetic heterogeneity, defining protein and gene expression profiles to link these data to human profiles, defining genetic modifications with a specific model system to explore the effects of adding and blocking expression of genes, and identifying therapeutic responses.
• **Dr. Phillipe Moreau** introduced a series of presentations discussing unfavorable prognostic factors.
• **Dr. Henk Lokhorst** presented an interim analysis of a Phase 3 study on the effect of thalidomide combined with high dose melphalan in patients with stage 2 and 3 MM.
• **Dr. Thierry Facon** presented an interim analysis of a trial looking at melphalan-prednisone (MP), MP-thalidomide, or HDT in patients 65 to 70 years of age.

April 14, 2005

Immune Biology

• **Dr. Madhav Dhodapkar** provided an overview of research conducted by his group: patient variability of the immune system, manipulations of the immune system, non-immune effects of immune cells, and cell targets of novel therapies.
• **Dr. Bjarne Bogen** addressed the question of how T cells reject tumors. He concluded that Id-specific CD4+ cells protect against MM disease in the bone marrow.
• **Dr. Derek Hart** reviewed DC biology in MM then presented some research updates. He suggested that cancer vaccination program is reasonable based on research results.
• **Dr. Massimo Massaia** introduced the topic of phenotypic and functional alterations of gamma/delta T cells in MM.
• **Dr. Reiner Raymakers** presented data showing allogeneic transplantation in MM patients who received preemptive DLI resulted in better outcomes and durable responses.

Experimental Agents

• **Dr. Mohamad Hussein** presented on the Phase 1 multidose study of SGN-40 in patients with refractory or recurrent MM. Conclusions from this trial indicate that SGN-40 is safe and well-tolerated with significant antitumor activity.
• **Dr. Li Long** continued the MAB discussion with his presentation on the antagonist Anti-CD40 antibody CHIR-12. A Phase 1 trial for MM is planned for 2005.
• **Dr. Suzanne Trudel** presented on CHIR-258, a multi-targeted tyrosine kinase inhibitor in the treatment of t(4;14) MM.
• **Dr. Helena Jernberg-Wiklund** discussed targeting the insulin-like growth factor-1 receptor (IGF-1R) in MM cells.
• **Dr. Noopur Raje** presented on the *in vitro* activity of a novel cyclin-dependent kinase inhibitor, CYC202.
• **Dr. Renate Burger** discussed inhibition of human plasmacytoma cell growth through a novel JAK kinase inhibitor.
• **Dr. Sagar Lonial** presented results of his study on the combination of tipifamib and bortezomib in MM cell lines.

Immunotherapy

• **Dr. Derek Hart** reviewed cancer vaccines and the important implications to MM.
• **Dr. Qing Yi** discussed tumor lysate DC vaccination in MM.
• **Dr. Michael Bishop** presented preliminary results of a trial looking at tumor antigen immunization of human allotransplant donors in MM.

PLEASE SEE SYDNEY, PAGE 30

SYDNEY — continued

• **Dr. Freda Stevenson** presented data about DNA vaccination against MM post-autologous or -allogeneic transplantation. Studies showed that DNA fusion vaccines are convenient and are an easy way to attack MM tumor cells.

• **Dr. Nikhil Munshi** reviewed various strategies to load antigens onto DC. His lab has fused DC and MM cells so that the resulting cell would present for antigen development. With only preliminary data available, comments about clinical efficacy cannot be made. Studies need to be conducted to come to an understanding of immune dysregulation in MM.

Drug Resistance

• **Dr. Pieter Sonneveld** noted that regardless of the advent of new therapeutic options in the treatment of MM, recurring disease is the primary reason for treatment failure. Multiple factors contribute to variations in drug response, such as drug transport, intracellular signaling, unknown genes, cross-talk, and the genetic evolution of the tumor. Therefore, a new strategy focusing on tumor targets needs to be employed to manage drug resistance. Dr. Sonneveld reviewed the role of pharmacogenetics in drug metabolism and reiterated that genetic markers are predictive of patient response to chemotherapy.

• **Dr. Laurence Catley** presented in place of **Dr. Dharminder Chauhan** on therapeutic implications of anti-apoptotic signaling in MM cells. Defects in apoptotic signaling can lead to the development of drug resistance. Bortezomib induces apoptosis in both pathways, suggesting that combining biochemical inhibitors of growth/survival signaling pathways with conventional anti-MM agents may enhance cell death.

• **Dr. Suzanne Lentzsch** discussed C/EBPß, which plays an important role in the generation of B lymphocytes. Data suggest that C/EBPß may also play a role in the pathogenesis of MM. Dr. Lentzsch analyzed the thalidomide derivative CC-4047. Similar to thalidomide, CC-4047 has anti-angiogenic properties, but with less side effects. Treatment with CC-4047 in mice with MM tumors induces complete remission that is sustained over the duration of treatment. Dr. Lentzsch concluded that CC-4047 inhibits growth and angiogenesis better than thalidomide and that C/EBPß may confer resistance to CC-4047.

• **Dr. Steven Le Gouill**'s study investigated the role of Mcl-1 in bortezomib-induced apoptosis in comparison to conventional therapies doxorubicin and melphalan. His analyses suggest that bortezomib and melphalan, but not doxorubicin, triggers Mcl-1-dependent-induced apoptosis pathways. His study demonstrates that Mcl-1 may be an important mediator of bortezomib and melphalan-induced apoptosis. **MT**

(1) MM: multiple myeloma
(2) MGUS: monoclonal gammopathy of undetermined significance
(3) SMM: smoldering multiple myeloma
(4) HDT: high-dose therapy
(5) VGPR: very good partial response
(6) PFS: progression-free survival
(7) ASCT: autologous stem cell transplant
(8) EFS: event-free survival
(9) RTKI: receptor tyrosine kinase inhibitors
(10) SCT: stem cell transplant
(11) MIP: macrophage inhibiting protein

Dear Reader:

On the heels of the 10th International Myeloma Workshop in Sydney, Australia, I would like to discuss one of the most exciting things at the IMF right now – research collaboration. For those of you who saw our daily reports on the web, our excitement is understandable! For those of you who haven't (yet!), allow me to bring you up to date with the multiple programs that the IMF has spearheaded on our on-going quest to find a cure for multiple myeloma.

Susie Novis

First of all, Bank On A Cure®, the first and largest myeloma DNA databank, is well on the way to providing the genetic information that will direct the future of myeloma treatment, and ultimately lead to a cure. Our collaboration with laboratories at the University of Minnesota and the Royal Marsden Hospital in England that process the patient kits and clinical trial samples will continue to lead the way. If you haven't yet requested your kit, please do so today! Call us to do so.

Furthermore, the International Working Group, the world's largest collaboration of researchers and sites involved in myeloma treatment, has produced the Management Guidelines, published in The Hematology Journal. These guidelines are a must for anyone living with myeloma and anyone involved with patient care. Look for their next breakthrough articles on prognostic factors and response criteria very soon.

The International Staging System (ISS), the largest collaborative myeloma research project in history, was led by the IMF, and involved a record 12,000+ patients and 17 research centers. This system is being used worldwide for consistency in myeloma staging. Every physician treating myeloma should have this information.

Through the efforts of Dr. Brian Durie and his long-standing relationships with colleagues Dr. Gareth Morgan, Dr. David Agus, Dr. Brian Van Ness, and Dr. Howard Urnovitz, we are leading the way, advancing new research in gene-expression, genetics, and proteomics that show incredible promise. For more information about these presentations in Sydney, please go to our website at www.myeloma.org.

If you have not yet noticed the list of Scientific Advisors of the IMF, please go back to page two of this newsletter. These researchers and clinicians are the backbone of myeloma research throughout the world. As we do not take the time to thank them often enough, let me say how much we value them and their dedication.

Finally, as much as we value our collaborators in myeloma research, we value each and every one of those involved with the IMF. Without your support, we could not continue to assist myeloma patients, families, caregivers, and healthcare providers in understanding this horrendous disease. Please accept our most heartfelt thanks to you all,

Susie Novis
President

International Myeloma Foundation
12650 Riverside Drive, Suite 206
North Hollywood, CA 91607-3421
U.S.A.
www.myeloma .org
(800) 452-CURE (2873)

Address Service Requested

NON-PROFIT ORGANIZATION U.S. POSTAGE PAID PERMIT NO. 665

Dedicated to improving the quality of life of myeloma patients while working towards prevention and a cure.