



# NEWS

In Partnership with ISOO • International Society of Oral Oncology

January 2017

## Welcome to the January Issue of the MASCC Society News



This month, we profile the Fatigue Study Group and highlight the research of member Kord Kober. We're pleased to introduce you to MASCC's new Study Group Coordinator, Donald Gubitosa. MASCC President Ian Olver highlights several recent meetings involving MASCC, and he provides an update on MASCC's strategic planning initiative and progress on the second edition of the MASCC Textbook. We also have news about World Cancer Day and upcoming conference reminders. Finally, we extend a warm welcome to the new members who joined us in November. And we wish a Happy New Year to all!

All issues of the *MASCC Society News* are available online at [www.mascc.org/newsletters](http://www.mascc.org/newsletters). Older issues (through August, 2016) can be found in the back pages of our journal, *Supportive Care in Cancer*.

~ Toni Clark, Editor

## A Message from MASCC President Ian Olver

The year 2016 ended with very successful meetings involving MASCC. The First Regional Educational Meeting on Supportive Care in Cancer Patients for the Eastern European and Balkan Regions, organized by Snežana Bošnjak, was held in Belgrade, Serbia in December. The meeting was highly commended, and a full report will appear in our February newsletter. Kazuo Tamura and Matti Aapro helped organize a MASCC session at ESMO Asia. Karin Jordan, Matti Aapro, and I presented a session on "Prophylaxis and Treatment of Symptoms in Oncology," and Alex Chan and I, as discussants, commented on a wide range of supportive care posters. We value our association with ESMO and took the opportunity to explore further how MASCC can best support the continuing development of supportive care in Asia.

A small group comprising Åge Schultz, Raj Lalla, and I met with an MDoutlook team, led by President Jan Heybroek, to work on background materials for the MASCC Strategic Plan for 2017-2020. MASCC has been working for years with MDoutlook, a disease intelligence organization focused on providing meaningful and actionable insight to life science organizations with a strong focus on oncology and other complex diseases. MDoutlook will provide a comprehensive review of MASCC's strengths, improvements, and opportunities. The underlying aim is to increase the value of MASCC. For example, one of my aspirational goals is to double MASCC's membership in order to increase our impact in supportive care. The strategic planning process will involve the Board of Directors and key MASCC members, as well as strategic task forces from the membership. These task forces will work on various aspects of the plan, including membership, adding value to the members, enhancing the productivity of our Study Groups, forming strategic alliances with other societies, and planning for our financial health. A strategic planning meeting, for the presentation of goals and implementation plans, will be held immediately prior to the June MASCC meeting in Washington, DC. I will share more details in the coming months.

I am very thankful to the authors who volunteered to write revised chapters for a second edition of the *MASCC Textbook of Cancer Supportive Care and Survivorship*. We are now receiving the completed chapters, and this will help us publish on schedule. The second edition includes new toxicities and new authors. The progression of systemic therapies from cytotoxic chemotherapy to immunotherapies has resulted in many new autoimmune toxicities and skin reactions, as well as organ toxicities in addition to those caused by cytotoxic drugs. Financial toxicity is a new social issue arising from the challenges of high drug costs and patients' inability to return to work. Despite these sobering new challenges, we have found that every chapter needs revision because there has been so much progress in the past five years — and that gives us hope for the future.

I would like to wish each of you all the best for the New Year and I look forward, with all of you, to increasing the impact of supportive care in cancer through MASCC in 2017!

**Spread the Word!**

**MASCC/ISOO 2017**

Washington, DC • June 22-24

Visit our online [Meeting Toolkit](#) to download signature banners, ads, and PowerPoint "Save the Date" slides. Get the word out and help make MASCC/ISOO 2017 the best supportive care meeting yet!

## Profile: The Fatigue Study Group

The Fatigue Study Group (FSG) was established with the primary purpose of conducting research, especially multidisciplinary pilot studies. The group's multiple areas of focus include basic science on fatigue mechanisms, translational studies (of both basic science and practice guidelines), and various aspects of fatigue in relation to the healthcare spectrum, including prevention, screening, detection, treatment, rehabilitation, survivorship, late effects, and palliative or end-of-life care.

A secondary purpose of the FSG is education. Many patients with cancer are not prepared for the degree of fatigue they might experience as a result of their disease or its treatment. Many are not educated in management strategies to cope with fatigue, even though a number of interventions have been found helpful. The group serves as a resource for MASCC and its members on all aspects of cancer-related fatigue. This includes identifying speakers and topics for scientific and plenary sessions at MASCC meetings, submitting publications to *Supportive Care in Cancer*, and providing information for the MASCC website on fatigue presentations, posters, resources, and FSG activities.

**RESEARCH** The FSG promotes collaboration among researchers and clinicians to counter the lack of understanding regarding the causes, definition, and measurement of cancer-related fatigue. The group recognizes the need for consensus on the defining features of fatigue in cancer survivors and standardized interventions and measurement outcomes. Recent research by FSG members has addressed diverse aspects of fatigue and energy levels in cancer survivors and chemotherapy patients. A few examples are age differences in fatigue and energy levels of cancer chemotherapy patients, the relationship between fatigue and depression in these patients, the role of neurotransmitters in the development and maintenance of fatigue and energy levels in breast cancer patients, effects of yoga and other exercise on cancer-related fatigue, fatigue in older cancer survivors, and phenotypic characteristics and genetic polymorphisms associated with high fatigue and low energy after breast cancer surgery.

**CLINICAL PRACTICE GUIDELINE DEVELOPMENT** The FSG has formed a working group to develop treatment guidelines for cancer-related fatigue. The group, which comprises exercise, integrative therapies, pharmaceutical/nutraceutical, and psychosocial components, plans to submit a manuscript for publication before the MASCC/ISOO Annual Meeting in June.

**WORKSHOPS** The FSG has also been very active in presenting workshops at the MASCC/ISOO Annual Meeting. Past workshops include “Cancer Cachexia and Fatigue in Advanced Cancer Patients” (2013), “Geriatric Oncology and Cancer-Related Fatigue: Advancing Supportive Care for Older Adults with Cancer” (2014), “Advances in Cancer-Related Fatigue: A Focus on Patients with Advanced Cancer” (2015), and “Sleep, Drowsiness, and Fatigue in Cancer Patients” (2015).

At the 2017 MASCC/ISOO Meeting in Washington, DC, the FSG will collaborate with the Palliative Care Study Group and the Rehabilitation, Survivorship, and Quality of Life Study Group in the presentation of a workshop titled “Circadian Rhythms and Chronobiology in Cancer: Relationship to Cancer-Related Fatigue and Other Toxicities.” This workshop will educate clinicians and researchers about potential mechanisms of toxicity, especially those that can give rise to multiple adverse events. Circadian phenomena have strong and direct implications for fatigue, sleep problems, delirium, pain, and other toxicities. A better understanding of the relationships involved will help clinicians choose treatments and will help researchers develop new and more effective therapies.

**JUNIOR INVESTIGATOR AWARDS** The FSG is unique among MASCC Study Groups in having instituted awards to honor outstanding research in cancer-related fatigue by trainees and young investigators. In 2016, for instance, the Study Group presented a Junior Investigator Award to Kord Kober, PhD, for his work on “Gene Expression Profiling of Inflammation and Immune Response Pathways in Oncology Patients Undergoing Chemotherapy with Distinct Evening Fatigue Trajectories” (see Research Highlight below). Kord is an Assistant Professor in the School of Nursing at the University of California, San Francisco. The FSG also honored Yun-Jen Chou, RN, MSN, with a New Investigator Award for her research on “Fatigue Management and Its Effectiveness Reported by Cancer Patients: A National Survey.” Yun-Jen is at the School of Nursing, National Taiwan University, Taipei City, Taiwan. Recipients of previous Junior Investigator Awards can be found at the MASCC website. See the Annual Meeting Highlights for each year.

**LEADERSHIP** The Chair of the FSG is Karen Mustian, PhD, MPH. Vice-Chairs are Debra Barton, RN, PhD, AOCN, FANN and Stephen R. Samuel, MPT.

Karen Mustian is Associate Professor in the Departments of Surgery, Public Health Sciences, and Radiation Oncology, and at the James P. Wilmot Cancer Center at the University of Rochester School of Medicine in Rochester, New York, USA. With a PhD in exercise science, Karen has long been interested in fatigue among cancer patients and in the benefits of exercise for combating fatigue and other adverse effects of cancer and its treatment. She has pointed out that, since cancer and its treatments can affect many organs (heart, lungs, muscles, bones) as well as the immune system, it's important to develop safe and effective exercise programs with realistic goals. Her recent research includes investigations of gentle yoga, walking, and strength training among cancer patients. Karen is a member of MASCC Study Groups on Fatigue, Nutrition & Cachexia, and Rehabilitation, Survivorship, and Quality of Life.



*Karen Mustian*

*Fatigue Study Group Profile continued...*

Debra Barton is the Mary Lou Willard French Professor of Nursing in the Department of Systems, Populations and Leadership at the University of Michigan School of Nursing in Ann Arbor, Michigan, USA. She has been involved in numerous areas of research and teaching and currently teaches intervention research in the PhD program. She has led many large clinical trials in oncology symptom management and has led studies of translational strategies aimed at understanding mechanisms of action and symptom physiology. Her research interests include fatigue, cognitive dysfunction, sleep, nausea and vomiting, and other effects of cancer and its treatment. She is also studying ways to improve self-image and sexual health among women with a history of breast and gynecologic cancer. Deb is a member of MASCC Study Groups on Fatigue, Psychosocial Issues, and Rehabilitation, Survivorship, and Quality of Life.



*Debra Barton*



*Stephen Samuel*

Stephen R. Samuel, MPT, is a Research Fellow at Manipal University in Udupi, Karnataka, India. Stephen is a physiotherapist dedicated to improving the lives of patients with cancer. His PhD research explores the effects of exercise training on functional capacity and quality of life among head and neck cancer patients receiving chemotherapy. His research interests also include the use of low-level laser therapy in treating oral mucositis. Stephen is a member of MASCC Study Groups on Fatigue, Mucositis, and Rehabilitation, Survivorship, and Quality of Life.

Currently, the FSG has over 150 members. The leaders invite all MASCC members to become involved in its activities, including research, abstract reviewing, and planning future activities. The FSG is also interested in collaborative work, focusing on fatigue, with other MASCC Study Groups.

## The Search for Mechanisms Underlying Fatigue Through Gene Expression Profiling

### RESEARCH HIGHLIGHT

Kord Kober, PhD, is this year's winner of the Fatigue Study Group's Junior Investigator Award for his research on gene expression profiling of inflammation and immune response pathways in breast cancer patients undergoing chemotherapy. In July, Kord and his colleagues, including MASCC members Christine Miaskowski and Judy Mastick, published their paper, "Gene Expression Profiling of Evening Fatigue in Women Undergoing Chemotherapy for Breast Cancer," in *Biological Research for Nursing*. The report contains extensive details regarding methodology and gene expression analyses that we cannot include here, but the paper is available for free download.\*

Moderate-to-severe fatigue occurs in up to 94% of women undergoing treatment for breast cancer. The severity of fatigue can vary over the course of the day, with considerable variability among individuals. But morning and evening fatigue seem to be two distinct, though related, symptoms. And they are distinguished by different phenotypic and genotypic characteristics. In reviewing recent literature, the authors found, for instance, that having a higher number of comorbidities was associated with morning fatigue, while caring for children at home was more associated with evening fatigue. Genotypic associations have also been reported. For example variations in interleukin (IL) 8 and tumor necrosis factor alpha (TNFA) have been associated with the severity of morning fatigue, while variations in IL 1 receptor 2, IL4, IL6, and TNFA have been associated with the severity of evening fatigue. Kober et al. reasoned that a better understanding of the unique phenotypic and molecular characteristics associated with these two distinct fatigue patterns would help in identifying high-risk patients and in developing interventions to relieve fatigue.

To date, fatigue management has not been very effective. The authors contend that this is largely due to a lack of understanding of the mechanisms that underlie fatigue. While some previous research has shown that inflammation might be involved in the onset of fatigue, there may be many contributing factors. Kober et al. reasoned that one approach to identifying other mechanisms underlying fatigue is to investigate associated gene expression. They looked at differences in the phenotypic characteristics and gene expression (of peripheral leukocytes) in a sample of 44 women undergoing chemotherapy for breast cancer who reported either low (n=19) or high (n=25) levels of evening fatigue (Lee Fatigue Scale). Kober and his colleagues also assessed functional status (Karnofsky Performance Status scale), comorbidities (Self-administered Comorbidity Questionnaire), and prior cancer treatments. Gene-expression measurements were obtained via total RNA extraction, microarray hybridization, and microarray preprocessing and normalization. Analyses included methods to assess differential gene expression and pathway perturbation, transcript origin analysis, and whole-transcriptome pattern comparison to public expression datasets.

Consistent with previous reports, the authors found that women in the high-fatigue group had poorer functional status and more comorbidities (e.g., diabetes, arthritis). A more surprising finding was the association between fewer previous cancer treatments and higher evening fatigue. This could be due to altered perceptions or increased tolerance on the part of those with more previous treatments, or to selection bias among study volunteers, but the authors acknowledge that further study of this phenomenon is warranted.

*Research Highlight continued...*

In all, 12 genes were identified that distinguished between the low- and high-evening-fatigue groups. One gene was identified as upregulated and 11 as downregulated in the high-evening-fatigue group. Gene set analysis found 24 downregulated and 94 simultaneously up- and downregulated pathways between the two fatigue groups. Transcript origin analysis showed that differential expression originated primarily from monocytes and dendritic cell types. The whole-transcriptome differential expression profile is consistent with those reported in gene-expression studies of exhaustive physical exercise, and the profiles for the high-evening-fatigue group were consistent with those reported in studies of sickness behavior. Further, the differential expression genes and pathways identified in this study have similar biological qualities and are the genes involved in inflammation, mitochondrial dysfunction, circadian rhythm disruption, and serotonin regulation.

The differentially expressed genes have plausible inflammatory and immune mechanisms for evening fatigue. The authors also identified several pathways associated with immune cell recovery after chemotherapy, as well as cytokine pathways and inflammation-related pathways that were significantly differentially perturbed between the two fatigue groups. The findings of the study also have implications for the role of circadian rhythmicity, the regulation of neurotransmission, and energy metabolism in chemotherapy-related fatigue.

This study is the first to evaluate differences in gene expression and perturbed pathways in breast cancer patients who reported low versus high levels of evening fatigue during chemotherapy. The analyses suggest that several mechanisms may underlie fatigue in cancer patients and that inflammation, neurotransmitter regulation, and energy metabolism are likely to be involved. They also show that chemotherapy may contribute to fatigue among cancer patients. The authors suggest that the patterns of gene expression found in this study might be shared with other models of fatigue (e.g., physical exercise and pathogen-induced sickness behavior).

Most important, perhaps, the findings of this study suggest that the molecular mechanisms associated with evening fatigue are multifactorial and, moreover, that these

mechanisms interact among themselves (for example, neurotransmitter regulation and inflammation, inflammation and mitochondrial dysfunction). Further research on the potential interplay among pathways can help to identify more exactly the mechanisms underlying evening fatigue.

\*Kober KM, Dunn L, Mastick J, Cooper B, Langford D, Melisko M, Venook A, Chen LM, Wright F, Hammer M3, Schmidt BL, Levine J, Miaskowski C, Aouizerat BE. Gene Expression Profiling of Evening Fatigue in Women Undergoing Chemotherapy for Breast Cancer. *Biol Res Nurs.* 2016 Jul;18(4):370-85. The paper is available for download from Sage Publications.

## Kord M. Kober

Kord M. Kober earned his MA and PhD in Molecular Evolutionary Biology at the University of California, Santa Cruz, and is currently Assistant Professor of Physiological Nursing in the University of California, San Francisco's School of Nursing. Kord's research centers around using genomic, transcriptomic, and epigenetic data and bioinformatic analyses to improve our understanding of the molecular mechanisms underlying common symptoms, such as pain and fatigue, as well as treatment failure in patients with chronic medical conditions. He has authored or coauthored numerous papers in these areas, including cancer-related fatigue and pain, especially in breast cancer patients. He is also interested in the empirical evaluation of different processes underlying molecular evolution and quantification of their relative contributions (e.g., natural selection in HIV populations). Kord is the recipient of an NSF Doctoral Dissertation Improvement Grant in the Directorate for Biological Sciences (2010-2012) and a Regents' Fellowship, Department of Ecology and Evolutionary Biology, UCSC (2006-2007). He is a member of three MASCC Study Groups: Fatigue; Neutropenia, Infection & Myelosuppression; and Neurological Complications.



*Kord Kober*



## World Cancer Day – February 4th

World Cancer Day is a global observance that helps raise people's awareness of cancer and how to prevent, detect, and treat it. This event is held each year on February 4th.

The day is designated as a time when people, businesses, governments, and nonprofit organizations work together to help the general public learn more about the different types of cancer, how to watch for it, treatments, and preventative measures. The World Health Organization (WHO) works with organizations such as the Union for International Cancer Control (UICC) on this day to promote ways to ease the global burden of cancer.

The theme of the 2016-2018 campaign is "We can. I can." and it includes among its key messages, an emphasis on support – both for people living with cancer and their caregivers. "Maintaining social support networks and talking about cancer can be important strategies for coping with the social and emotional impact of cancer, both in the short and long term." The campaign stresses the importance of asking for support when it's needed, whether from partners, family, friends, colleagues, or healthcare professionals, and the importance of supporting others, both cancer patients and their caregivers. This emphasis is based on the recognition that caregivers, most often partners, family members, or friends, usually have little preparation and little support, themselves, for the role of carer. "Many carers put their own needs and feelings aside to focus on the person with cancer, and as a consequence may experience emotional distress and social isolation. Recognizing the challenges of looking after someone with cancer and seeking support can have wide-ranging benefits for coping and quality of life."

Visit [worldcancerday.org](http://worldcancerday.org) for more information, a Campaign Toolkit, and ideas on how to mark this occasion in your own community or workplace.

## Meet MASCC's New Study Group Coordinator, Don Gubitosa

We recently announced that Don Gubitosa, of North Wales, Pennsylvania, USA has accepted the position of Study Group Coordinator and Manager of Sponsor Relationships, replacing Anne Young, who retired from MASCC at the end of December.



*Don Gubitosa*

Don's qualifications include knowledge of the medical education regulatory environment, ACCME guidelines, and national and international medical societies. He has many years of experience in program and budgetary management, and a familiarity with medical and scientific literature. Don worked for many years at Merck & Company, Inc., most recently as Associate Director of Advocacy and Professional Affairs. In this position, he coordinated and managed CME and non-promotional education activities, including development of strategic educational plans for Merck's Vaccine Division. His work also involved managing comprehensive budgets and liaising with numerous medical societies, including the National Comprehensive Cancer Network and the Society of Gynecologic Oncology. He has participated as an industry liaison on several corporate advisory boards. Over his career, Don has garnered numerous awards and honors for outstanding service and achievement, as well as innovative educational programming.

In his role as Study Group Coordinator, Don will oversee the activities of MASCC's 16 Study Groups, providing services to help them achieve their goals and providing status updates on Study Groups to MASCC's Executive Committee and Board of Directors. He will provide liaison services to and from the Study Groups and MASCC's leadership, the Annual Meeting planners, and MASCC's Membership, Publications, and Guidelines Committees. He will also assist Study Groups with workshop applications, presentations, and scheduling. As Manager of Sponsor Relationships, Don will work with MASCC's meeting management company (Kenes) to identify, solicit, and manage meeting sponsorships and will oversee the annual sponsor budget.



### Recruit a Colleague in 2017!

Make 2017 the year you introduce a colleague to MASCC! We currently have more than 1,000 members worldwide, representing more than 60 countries and 6 continents. In the past year, we've seen an increase in members from all countries, especially Australia and other countries of the Asia-Pacific region. Membership benefits include a free subscription to our monthly journal, Supportive Care in Cancer, access to members-only areas of our website, discounts on supportive care books and meeting registration fees, and numerous opportunities to work with MASCC Study Groups, to exchange ideas and expertise, and promote supportive care in cancer. Our members include medical and surgical oncologists, radiologists, nurses, dental professionals, pharmacists, social workers, dietitians, psychologists, industry representatives, and students. Membership is open to anyone interested in the prevention and management of the adverse effects of cancer and its treatment.

And don't forget! We have several membership categories and special rates for retirees, students, trainees, and members from developing-world countries. See all the membership options and tell your colleagues, students, and trainees.

## MASCC/ISOO 2017 • Washington, DC • June 22-24

This year's Annual Meeting, MASCC/ISOO 2017, will take place in Washington, DC, June 22-24. As always, MASCC will follow its tradition of presenting a truly multidisciplinary approach to supportive care in cancer. The scientific program will include plenary sessions on financial toxicity, precision medicine, and immunotherapy side effects – topics that span a range of specialties and allied professions. Conference workshops this year include the following topics: the effects of following guidelines on the costs of supportive care, the challenges of thromboembolism, the integration of oncology and palliative care, communication challenges in geriatric oncology, and circadian rhythms and chronobiology in cancer. Each of these workshops represents the collaboration of two or more MASCC Study Groups, which will ensure a multidisciplinary perspective. Poster sessions will provide an opportunity for world leaders in cancer supportive care to mentor future experts in the field. Join your colleagues with mutual interests in supportive care on this important global platform!

Washington, DC, the US capital, is a compact city defined by imposing neoclassical monuments, museums, and performing arts venues. As the heart of US government and finance, it is home to the White House, the Federal Reserve, and the National Archives Building, which houses the US Declaration of Independence. Museums and other points of interest include the Smithsonian Institution, the National Gallery of Art, the National Museum of Natural History, the National Air and Space Museum, the Holocaust Memorial Museum, the Vietnam Veterans Memorial, the Washington Monument, and the Lincoln Memorial. The Kennedy Center of Performing Arts is a well-known cultural center and The National Cancer Institute is only a short distance away in Bethesda, Maryland.



## REMINDER • Upcoming Conferences

March 23-25, 2017

**NCCN 22nd Annual Conference • Improving the Quality, Effectiveness, and Efficiency of Cancer Care**

Orlando, Florida, USA

[https://www.nccn.org/professionals/meetings/annual\\_conference.aspx](https://www.nccn.org/professionals/meetings/annual_conference.aspx)

June 16-17

**2nd Sapporo Conference for Palliative and Supportive Care in Cancer**

Sapporo, Japan

<http://www.sapporoconference.com/en/index.html>

June 22-24, 2017

**MASCC/ISOO Annual Meeting on Supportive Care in Cancer**

Washington, DC, USA

<http://www.mascc.org/meeting>

July 9-12, 2017

**International Conference on Cancer Nursing (ICCN) 2017**

Anaheim, California, USA

<http://www.isncc.org/?page=Conference>

## 2017 MASCC/ISOO Annual Meeting

### - KEY DATES! -

**Abstract Submission Deadline:**

**February 14, 2017**

**Award Application Deadline:**

**February 14, 2017**

**Early Registration Deadline:**

**April 5, 2017**

**Registration Deadline:**

**June 7, 2017**

## New MASCC Members

MASCC welcomes the following new members who joined us in November!

Alaa Alanazi, Saudi Arabia

Milan Anadkat, United States

UYuko Cho, Japan

Fang-yu Chou, United States

Lesley Fallowfield, United Kingdom

Renee Koppelmans, The Netherlands

Anantha Naik Nagappa, India

Hilary Pada, Canada

Emma Riley, United Kingdom

Sandra Sinske, South Africa

Kim ten Boehmer, The Netherlands

# MASCC/ISOO

## ANNUAL MEETING SUPPORTIVE CARE IN CANCER

22-24 June | Washington DC, USA

# Save the Date!



# 2017

SUPPORTIVE CARE  
MAKES EXCELLENT  
CANCER CARE POSSIBLE

### Have any news items to share?

Please send contributions for the MASCC News to [MASCCnews@mascc.org](mailto:MASCCnews@mascc.org)  
or to Toni Clark, Editor at [tclark@mascc.org](mailto:tclark@mascc.org)

For more information please contact: Åge Schultz, MASCC Executive Director: [aschultz@mascc.org](mailto:aschultz@mascc.org)