Message from the President

Thomas Hellmut Schindler, MD

Dear Colleagues,

In Baltimore, I had the great honor of succeeding Prem Soman as President of the Cardiovascular Council. We are all grateful to Prem, as his presidency established new highs for outreach to other societies in the field of cardiovascular imaging, including the American Society of Nuclear Cardiology (ASNC), the American College of Cardiology (ACC), the American Heart Association (AHA), the Society of Cardiovascular Computed Tomography (SCCT), the Canadian Society of Nuclear Medicine (CSNMMI), and his continued support for multimodality imaging in cardiovascular disease.

The Society of Nuclear Medicine and Molecular imaging (SNMMI) now faces a time of upcoming alterations and challenges within a changing healthcare environment. Centers of multimodality imaging are developing and growing in the US. This also necessitates an increasing demand for physicians with a “dual” Board Certification in Nuclear Medicine and Radiology and a new pathway of a “common” Certification Board for Nuclear Medicine and Radiology is emerging. While the current situation has led to much uncertainty within the Nuclear Medicine community, it should also be seen as an “opportunity” for its members to develop and expand the scope of the SNMMI.

The field of Nuclear Cardiovascular Imaging is moving not only towards Molecular but also to Multimodality Imaging. As Nuclear Cardiology continues to be the mainstay in clinical routine and also provides potential for many new and exciting radiopharmaceutical probes, other imaging modalities such as cardiac Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) are on the horizon and enrich our field. To adequately meet this development we need to expand the role of our Council in educating our members and referring physicians not only about advances of nuclear cardiovascular imaging procedures but also about the potential of other imaging modalities to contribute to the assessment and characterization of cardiovascular disease.

As changes in the health care environment will emphasize “diagnostic value”, the SNMMI will intensify interactions with other clinical organizations’ scientific sessions. Apart from cardiovascular imaging itself, we will also promote integrated and clinically orientated educational symposia. In addition, demonstration of cost-effectiveness of nuclear imaging techniques will be vital to promote this field in the clinical routine.

Last but not least, the Cardiovascular Council will be reinforcing the outreach for international member participation within SNMMI. For this endeavor, we are actively evaluating opportunities to engage more international members. Over the next year, I look very much forward to interacting with the members of the Cardiovascular Council and advancing together the field of Nuclear Cardiovascular Imaging.
The Cardiovascular Council (CVC) congratulates **Dr. Robert J. Gropler**, of Washington University in St. Louis, as the recipient of the 2015 Hermann Blumgart Award. This award is the Cardiovascular Council’s highest honor and is given based on both scientific contributions to the field of cardiovascular nuclear medicine and service to the Council. Dr. Gropler gave his presentation entitled, “**Cardiovascular Nuclear Medicine at the Vanguard of Precision Medicine in Cardiovascular Disease**” during the SNMMI Annual Meeting in Baltimore, Maryland.

(Pictured right to left: Vasken Dilsizian, MD, CVC Immediate Past President and Chair of the CVC Nominating Committee; Robert J. Gropler, MD, 2015 Hermann Blumgart Award Winner; Prem Soman, MD, PhD, CVC President; Mehran M. Sadeghi, MD, CVC Past-President).

**Robert J. Gropler, MD, presents during the 2015 SNMMI Annual Meeting in Baltimore, MD.**

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**Congratulations to the 2015 CVC Young Investigator Award Winners!**

Each year during the SNMMI Annual meeting, the Cardiovascular Council recognizes the best scientific abstracts among young investigators working in cardiovascular nuclear medicine. Congratulations to the 2015 YIA winners on their impressive Abstracts and presentations:

**Basic Science**

1st Place - Junaid Afzal - "Dual isotope SPECT-CT imaging using sodium-iodide symporter (NIS) reveals improved energetics following cardiac transplantation of stem cells encapsulated in hydrogels."

2nd Place - Rudolf Werner - "Serial assessment of myocardial inflammation in a rat model of experimental myocarditis by PET."

3rd Place - Yunan Yang - "64-Cu-NOTA-YY146: A first-in-class for PET imaging of peripheral artery disease."

**Clinical Science**

1st Place - Christopher Rischpler - "18F-FDG uptake post ischemic myocardium: relevance as a prognostic marker for functional recovery."

2nd Place - Seung-Pyo Lee - "Diagnostic and Prognostic Implication of 11C-Pittsburgh B Positron Emission Tomography in AL Cardiac Amyloidosis."

3rd Place - Axel Van Der Gucht - "99mTc HMDP myocardial scintigraphy is predictive of major adverse cardiac event (MACE) in patients with transthyretin-type (TTR) amyloidosis."
Intern Update:

James Thackeray, PhD

James Thackeray began his internship with the CV Council at the SNMMI Annual Meeting in Baltimore, and is currently the Postdoctoral Fellow in Preclinical Molecular Imaging for the Department of Nuclear Medicine at the Hannover Medical School in Germany.

During his internship he will be working with former CV Council President and Blumgart Awardee Dr. Frank Bengel. The Nuclear Medicine team at Hannover is well known for their molecular imaging work in the biological processes of myocardial infarction, inflammation and ventricular remodeling.

He explains his focus and ongoing projects this way:

“In the first hours after infarction, there is a rapid, organized recruitment and infiltration of activated inflammatory leukocytes to the damaged region to support the natural healing process. The progression and severity of this acute inflammatory stage directly influences the infarct size and subsequent remodeling.

“Our goal is to develop a protocol that accurately models this process to provide additional insight into the pathophysiology, and to monitor the efficacy of novel gene- and cell-based therapeutic strategies to modulate acute inflammation.”

He states further that while 18F-deoxyglucose has been established as a marker of activated macrophages, persistent uptake by healthy cardiomyocytes, remote from the infarct as well as complications due to ischemic memory, necessitate the employment of strategies to suppress cardiomyocyte glucose metabolism in order to isolate the inflammation signal.

“This complexity underscores the value of molecular imaging tracers targeted to specific processes and components of the inflammation cascade after myocardial infarction”, he added.

He currently has an original manuscript in press with the JNM, focused on image-derived input function approaches to apply Patlak kinetic analysis of glucose utilization with 18F FDG in mice.

“It is increasingly important to ensure the translation of not only image quality between rodent models and clinical application, but also quantitative analysis in order to properly evaluate findings in models of metabolic abnormality and to yield clinically relevant conclusions.”

James is currently working with his Council Mentor, Dr. Rob Gropler, and Dr. Frank Bengel to define his intern projects for the CV Council.

The Council is pleased to have yet another strong intern for the 2015-2017 term, and we look forward to reporting more of this interesting and important work.

New Council Activity: Updated Position Papers

Cardiovascular Council President Thomas Schindler, MD, has initiated the development of two new position papers to serve as reference documents for CV Council members.

The first, addressing the emerging importance of the quantification of myocardial blood flow (MBF) and coronary flow reserve (CFR) with PET, will be spearheaded by Council member Venkatesh Murthy, MD, PhD of the University of Michigan, and former CV Council President Marcelo DiCarli, MD, of Brigham and Women’s Hospital in Boston. Both have been collaborators on large series that established the clinical, diagnostic and prognostic value of the non-invasive quantitative assessment of vasodilator function in patients with known or suspected CAD.

Although very powerful, traditional risk markers do not together fully account for the risk of cardiac death, especially among high-risk subgroups. This suggests that other mechanisms may contribute to clinical risk. One such mechanism may involve the
adverse effects of atherosclerosis and its effect on coronary epicardial and microcirculatory function, thereby increasing the potential for ischemic and atherothrombotic complications. Coronary circulatory dysfunction is present in the earliest stages of atherogenesis and precedes significant angiographic stenosis, identifiable by PET-determined reductions in regional and global myocardial flow reserve (MFR) that carries important diagnostic and prognostic information.

Absolute MFR is the ratio of peak myocardial blood flow (MBF) in mL/g/min during vasodilator stress to resting flow as a quantitative measure of vasodilator capacity of the coronary circulation. In contrast to conventional SPECT imaging, the assessment of the regional MFR affords the hemodynamic evaluation of each single epicardial stenosis in multi-vessel disease. Flow-limiting effects of epicardial stenosis can be assumed given the stenosis severity exceeds 70% associated with a MFR less than 1.6 (Position paper of Gould KL et al. J Am Coll Cardiol 2013), that needs to be further tested clinically.

The CV Council is also developing a position statement on the role of cardiac PET and PET/CT for Cardiac Sarcoid disease (CS), and will be authored by Council Vice-President Elect Panithaya Chareonthaitawee, MD of the Mayo Clinic, and Ron Blankstein, MD, FACC from the Brigham.

Cardiac PET using a combination of perfusion and 18F-fluorodeoxyglucose (18F-FDG) imaging is being increasingly utilized for the diagnosis, management and treatment response of cardiac sarcoidosis; a multi-system disease characterized by granulomatous inflammation. Cardiac sarcoid disease may vary from subclinical disease to sudden cardiac death. Apart from conductance disturbances that may lead to atrioventricular block, arrhythmias such as ventricular tachycardia may occur even when normal systolic heart function is present. Unfortunately, sudden cardiac death and development of heart failure may occur. First outcome data from Boston (Blankstein R et al. J Am Coll Cardiol 2014) signify that cardiac PET may play a crucial role in risk assessment in these patients by identifying early, active and inflammatory stages of cardiac sarcoid involvement or disease. A writing group has been formed to critically review the available literature, and to provide a consensus-based guideline on the use of PET for the detection and characterization of cardiac sarcoid disease.

Our thanks go to the authors for this significant undertaking. The Council will review the draft position papers and announce their availability when fully approved by the Board of Directors.

**Save the Date!**

Make plans to attend the **SNMMI Mid-Winter Meeting** in Orlando, Florida, January 28-31, 2016. The Cardiovascular Council will be sponsoring sessions on the following topics:

- Dedicated Cardiac SPECT (*co-sponsored with the Computer & Instrumentation Council*)
- Emerging and Established Roles of Imaging in Heart Failure
- Emerging Molecular Imaging Approaches in Cardiology

Please visit the **Cardiovascular Council** website for more information and to join!