

## DIRECTOR'S NOTES

I am happy to announce that the Center for Metabolic Bone Disease (CMBD) just received another round of funding as a University-Wide Center in the amount of \$180,000/year for the next three years.

The CMBD NIH Institutional Training Grant has one postdoctoral fellow slot open. This slot can be filled by either a basic or clinical research fellow. Please contact me if you have an applicant.

Since the last newsletter, the CMBD has also played a role in the recruitment of two new faculty at UAB:

- Rosa A. Serra, Ph.D., Assistant Professor, Department of Cell Biology – The CMBD partnered with the Department of Cell Biology and the Comprehensive Cancer Center. Dr. Serra is studying the role of members of the TGF-beta superfamily in mammalian development.
- Danny R. Welch, Ph.D., Professor of Pathology and Director, Bone Metastases Program, UAB Comprehensive Cancer Center – The CMBD partnered with the Department of Pathology and the Comprehensive Cancer Center. Dr. Welch is studying tumor repressor genes in metastatic cancer.

The CMBD will fund two new pilot and feasibility projects at \$35,000/year, renewable for one year. Awardees are George Pan, M.D., Research Instructor, Department of Pathology (Title: Molecular Mechanisms of AIDS-Associated Bone Loss) and Katri K. Selander, M.D., Ph.D., Research Assistant Professor, Department of Medicine (Title: The Role of Prostate Derived Factor in Prostate Cancer Bone Metastases).

The Center for AIDS Research and CMBD Joint Symposium, Metabolic Complications Related to HAART, which was held on January 31, 2002, brought together experts from throughout the country. The problem is briefly outlined below.

*Jay M. McDonald, M.D., Director, Center for Metabolic Bone Disease*  
**Email:** CMBD@path.uab.edu; **Office:** 205-934-6666; **Website:** <http://cmbd.path.uab.edu>

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## OSTEOPOROSIS AND AIDS

Osteoporosis is a recently described complication in HIV-infected patients. Patients receiving combination antiviral therapy (HAART) appear to be most prone to this complication. In a series of 112 HIV-1 infected patients on HAART, there was a 50% increase of osteopenia and 23% incidence of osteoporosis. Although not confirmed in controlled prospective studies, there are associations with increased incidence of femoral head osteonecrosis and the recently described lipodystrophy syndrome. The latter syndrome, which is seen in increasing numbers of HAART-treated HIV-infected individuals, includes the following features: 1) peripheral fat loss, 2) truncal adiposity, and 3) increased triglycerides. The cause of the osteoporosis is unknown. In the largest series to date, a serum bone marker of bone formation, osteocalcin, was decreased and a marker of bone resorption, C-telopeptide, was increased. Parathyroid hormone has been reported to be decreased in HIV-infected individuals, but no association with bone disease has been made. Other etiological possibilities that have been considered include abnormalities in vitamin D metabolism, IGF-1 metabolism, TNF $\alpha$ , and hypogonadism. Clearly unknown in its etiology, the development of these complications of AIDS represents new challenges for which basic, clinical and translational research are required to understand basic mechanisms and treat or design new treatments that avoid this complication.

Current research at UAB on this topic include basic and animal studies by Philip A. Wood, D.V.M., Chair, Department of Genomics and Pathobiology (funded by Bristol Myers) and clinical research by Barbara A. Smith, Ph.D., Professor and O'Koren Endowed Chair, Center for Nursing Research (funded by NIH). Dr. George Pan now has a CMBD pilot grant investigating basic cellular mechanisms underlying the bone disease.

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