

# JUNIOR FACULTY SEMINAR

January 22, 2008, Convo Hour  
Collins Center

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## **I.N.V.E.S.T. in Muscle and Bone Health:** Investigating New Variables in Exercise and Strength Training

Resistance training is one of the most commonly prescribed forms of exercise in the world today. The established benefits of resistance training such as growth in muscle size, strength, and power are only part of the picture as it has also been demonstrated to be effective in the prevention and treatment of common chronic diseases including heart disease, diabetes, and osteoporosis. We recruited 34 participants, between the ages of 18-25, from the LMU campus. All subjects reported to the Human Performance Lab for baseline testing of bone mineral density, body composition, and isokinetic muscular performance of the knee flexors (hamstrings) and extensors (quadriceps). Vertical jump and one repetition maximum tests of the squat and bench press were tested at Burns Recreation Center. Participants volunteered to be controls or exercisers. The exercisers were then randomized to a traditional free weight training program or a novel, band-resistance training program, creating final groups of 10 controls, 12 free weight, and 12 band participants. In September, subjects embarked on a 12-week periodized, high-intensity training program, including three 75 minute workouts per week, monitored by trained student research assistants. One-day diet records were collected on two occasions from subjects and controls to assist in evaluating dietary influence on dependent variables. Groups were not significantly different in age, height, weight, body mass index, percent body fat, vertical jump, or one repetition maximum variables at baseline. We hypothesize that the band group will have the greatest improvement in power, strength, and bone mineral density variables. At the midway point of 12 weeks of training, a trend was observed for a greater change in vertical jump and squat one repetition maximum for the band group in comparison to the free weight and control groups. In January, participants will continue training to reach a final 24 weeks of exercise by May 2008.



Please **RSVP** by **Jan 17, 08**: [dherreiner@lmu.edu](mailto:dherreiner@lmu.edu)

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