



Mechanical and Aeronautical Engineering Department  
University of California Davis  
Davis, California 95616-5294

## 2005-2006 Monthly Seminar Series on Space Research

20 October, 17 November, 19 January, 16 February, 20 April, 18 May  
3<sup>rd</sup> Thursday 4:00-5:00 pm

### ***Industrial Applications of Design Optimization***

**Gary Vanderplaats, PhD, PE**

*President*

*Vanderplaats Research & Development, Colorado Springs, CO*

Date: 16 February 2006\_Thursday      Time: 4:10-5:00 pm      Location: 1062 Bainer  
*Refreshments will be provided at 4:00 p.m.*

#### **ABSTRACT**

A brief overview of design optimization will be presented along with a review of the historical developments. Key methods will be briefly reviewed and some practical insights will be offered. Single and multidiscipline optimization will be defined and discussed. Numerous examples will be offered to demonstrate the breadth of design tasks that can be addressed with optimization. While many of these examples do not apply specifically to space applications, the technology discussed is directly extendable to space applications. The overall goal is to offer a broad perspective of optimization and how it may be used in the everyday design environment.

#### **ABOUT THE SPEAKER**

Dr. Garret N. (Gary) Vanderplaats received his Ph.D. in Solid Mechanics from Case Western Reserve University in 1971. He worked as Research Scientist for 8 years at NASA Ames Research Center. He then taught for 5 years at the Naval Postgraduate School and in 1984 joined the faculty at U.C. Santa Barbara as professor of Mechanical Engineering where he twice received the outstanding professor award in Mechanical Engineering. In 1987, he left the university to devote full time to industrial R&D in design optimization, as president of Vanderplaats Research & Development. Dr. Vanderplaats is author of several optimization programs and has directed the development of the GENESIS structural optimization and VISUALDOC general-purpose optimization software. He has applied optimization techniques to a wide variety of design problems in aeronautical, civil, mechanical and automotive engineering. He has authored many papers, as well as a textbook, and has lectured extensively, worldwide. He is a member of ASME and SAE and a fellow of AIAA.

Dr. Vanderplaats is the 2002 recipient of the AIAA Multidiscipline Design Optimization Award "For his great impact on the application of optimization to engineering design through teaching, algorithm development, and the creation of outstanding software."

#### ***For more information about***

***SpaceED (Space Engineering Research and Graduate Program) or the seminars please contact Professor Nesrin Sarigul-Klijn at (530)-752-0682 or [nsarigulklijn@ucdavis.edu](mailto:nsarigulklijn@ucdavis.edu)***

Members of the campus community and visitors from the region are welcome to attend the seminar series.

Sign-in is required at the event. SpaceED seminar will replace MAE297 seminar on 3<sup>rd</sup> Thursdays.

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