



HAROLD W.
Gegenheimer
LECTURE SERIES ON INNOVATION

Thursday, October 19, 1995

3:00 p.m.

Manufacturing Research Center Auditorium

811 Ferst Drive

Georgia Institute of Technology

Atlanta, Georgia



Harold W. Gegenheimer

brief biography

Harold W. Gegenheimer received his bachelor's degree in mechanical engineering from Georgia Tech in 1933. He is the retired Chairman Emeritus of the Baldwin Technology Company, an international manufacturer of material handling, press accessory and pre-press equipment for offset printing. He has been associated with printing all his life as a machinist, machine design engineer, inventor, product development manager and corporate Chief Executive Officer. His inventions, for which many United States and foreign patents were obtained, were keys to the great growth of the offset process in the post World War II period. Always a strong supporter of graphic arts associations and institutions, he has been keenly aware of their research and educational functions, and in earlier years, he traveled extensively to address meetings and seminars on improved printing techniques. He was President of the National Printing Equipment and Supply Association from 1977 to 1979. As an officer or director of other industry associations and the recipient of technical and educational awards, he was elected 1983 Graphic Arts Man of the Year. As an inventor he continues to express interest in the great advances made at his alma mater with innovative programs which link industry with graduate and undergraduate studies.

3:00

INTRODUCTIONS

Ward O. Winer,
Regents' Professor & Chair
George W. Woodruff
School of Mechanical Engineering

COMMENTS

Harold W. Gegenheimer,
Chairman Emeritus
Baldwin Technology Company, Inc.

LECTURE

Jerry M. Woodall
Charles William Harrison Distinguished
Professor in Microelectronics
Purdue University

4:00

PANEL DISCUSSION

RECEPTION TO FOLLOW

An endowment from Mr. Gegenheimer supports student programs that encourage creativity, innovation, and design. Through the lecture series and support of capstone design projects, students are exposed to processes that stimulate creativity and lead to inventions and patents.

“NECESSITY IS THE MOTHER OF INVENTION, BUT CURIOSITY AND PERSISTENCE MAKE IT HAPPEN”

Abstract - Jerry M. Woodall

Like the weather, there is much talk about creativity but little is done about it. Most people have little or no trouble in learning the skills needed for doing their jobs or avocations. Yet, when we talk about work that requires creativity, we seem to be talking about a great mystery as though creativity were an inherited trait, randomly distributed among the population. However, we are wrong to speak so; as a result of reflecting on my own career and from conversations with other innovators and inventors, I am firmly convinced that creative abilities can become an acquired trait.

One must do several key things in order to become “creative”. First, one must identify something that begs to be improved, and, is also worthy of an intense intellectual investment. Next, one must be exposed to both specific and tangential information about the thing of interest. These “facts” swirl around in memory until some “event” triggers their return to consciousness

where they aid in developing a new idea.

Next, it is absolutely necessary that one’s curiosity about “the problem” dominates all other activities. This is both the most important and hardest part of the creative process. It takes great courage to be only curiosity motivated for long periods of time. Spouses and bosses are usually unsympathetic towards those who have become obsessed with the invention process and have withdrawn into their own private worlds. But this is the part that results in the “light bulb” being turned on.

Finally, persistence is needed in order to make the new idea real. For this to happen the idea must be either communicated to others or reduced to practice, i.e., made to work. Notice that no new or strange abilities are needed to become an inventor. At some level we all know how to withdraw into a daydream like state; and we can all learn to become diligent whether we like it or not.



Jerry M. Woodall

brief biography

Jerry M. Woodall graduated from the Massachusetts Institute of Technology in 1960. His first job was with Clevite Transistor Products, a maker of semiconductor devices. In 1962, he joined the IBM Research Center in Yorktown Heights, NY, launching a 31 year career at IBM in the research and development of new compound semiconductor materials and novel devices. There he invented a reliable process for making semi-insulating GaAs wafers. In 1982, he earned a Ph.D. in electrical engineering from Cornell University. In 1985, he was elected IBM Fellow for his contributions and inventions relating to III-V semiconductor materials and devices. These include the invention of: Si doped GaAs light emitting diodes (LEDs), used for optical signaling, e.g., TV remote control, with current sales of about \$1 billion per year; GaAlAs high efficiency red LEDs, used, for example, in traffic lights, auto brake lights, etc., with current sales of over \$500 million; and commercially emerging devices, e.g. GaAlAs/GaAs high efficiency solar cells and GaAlAs/GaAs based transistors. His contributions have been recognized by major awards from, and his

election as Fellow to, 4 major international professional societies, including IEEE, IBM divisional and corporate awards, and the National Academy of Engineering in 1989. His name appears as the inventor or co-inventor on 65 issued US patents, and he is author or co-author of 250 journal articles.

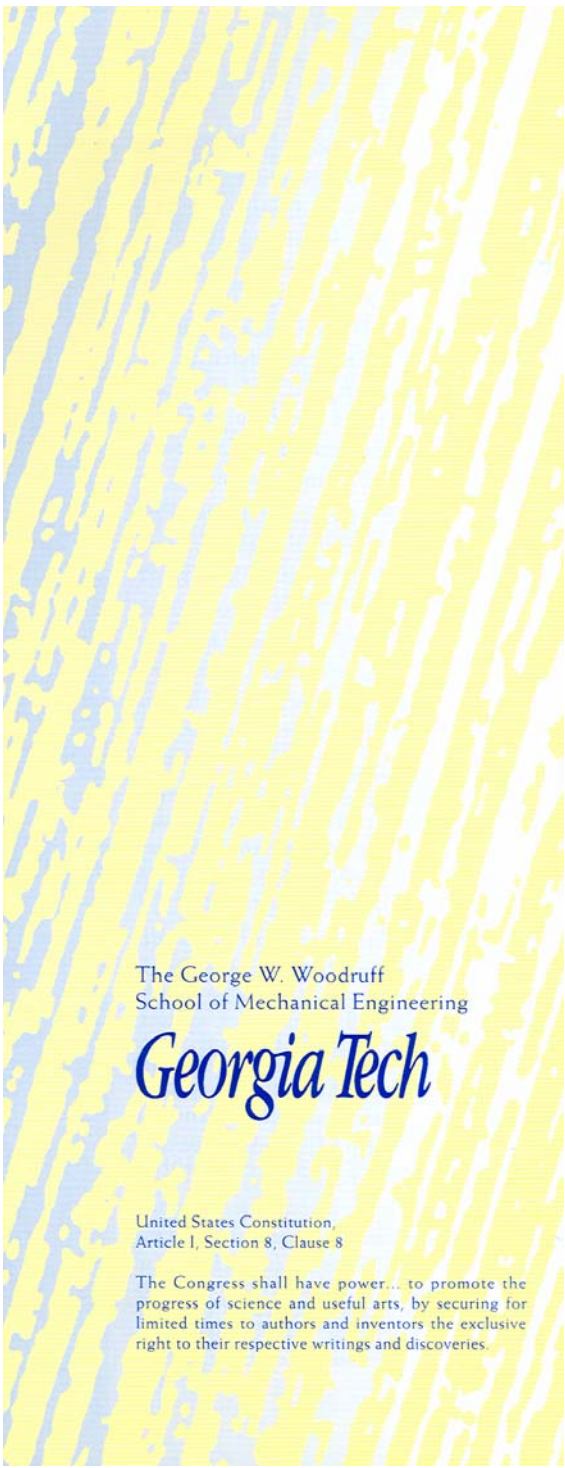
In 1993 he joined the faculty of the School of Electrical and Computer Engineering at Purdue University as the Charles William Harrison Distinguished Professor of Microelectronics, where he teaches and continues his research on compound semiconductors.

PANELISTS:

Coe A. Bloomberg is a Georgia Tech mechanical engineering graduate and partner with the firm Lyon & Lyon, one of the largest intellectual property firms in the country and the preeminent patent litigation firm in the western United States.

Parker H. (Pete) Petit is a pioneer and leader in the field of engineering in medicine and home health care services. He is Chairman and Chief Executive Officer of Healthdyne, Inc. and Healthdyne Information Enterprises, and Chairman of Healthdyne Technologies. Mr. Petit is a graduate of the Woodruff School of Mechanical Engineering.

Barry Rosenberg is responsible for the management of Georgia Tech's Office of Technology Licensing, which includes the evaluation and marketing of technologies emanating from the research work of the Institute.



The George W. Woodruff
School of Mechanical Engineering

Georgia Tech

United States Constitution,
Article I, Section 8, Clause 8

The Congress shall have power... to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.