



Electrification: #1 Engineering Feat of 20th Century

WASHINGTON – One hundred years ago, life was a constant struggle against disease, pollution, deforestation, treacherous working conditions, and enormous cultural divides unbreachable with current communications technologies. By the end of the 20th century, the world had become a healthier, safer, and more productive place, primarily because of engineering achievements.

Speaking on behalf of the National Academy of Engineering (NAE), astronaut/engineer Neil Armstrong announced on February 22 the 20 engineering achievements that have had the greatest impact on quality of life in the 20th century. The announcement was made during National Engineers Week 2000 at a National Press Club luncheon.

The achievements – nominated by 29 professional engineering societies – were selected and ranked by a distinguished panel of the nation's top engineers. Convened by the NAE, this committee – chaired by H. Guyford Stever, former director of the National Science Foundation (1972-76) and Science Advisor to the President (1973-76) – worked in anonymity to ensure the unbiased nature of its deliberations.

“As we look at engineering breakthroughs selected by the National Academy of Engineering, we can see that if any one of them were removed, our world would be a very different – and much less hospitable place,” said Armstrong.

Top 20 Engineering Impacts of the 20th Century

- 1) Electrification – the vast networks of electricity that power the developed world.
- 2) Automobile – revolutionary manufacturing practices made the automobile the world's major mode of transportation by making cars more reliable and affordable to the masses.
- 3) Airplane – flying made the world accessible, spurring globalization on a grand scale.
- 4) Safe and Abundant Water – preventing the spread of disease, increasing life expectancy.
- 5) Electronics – vacuum tubes and, later, transistors that underlie nearly all modern life.

Continued on page 2

IEEE Section Meeting

Gary Hughes

American Express Financial Advisors, Inc.

Financial Planning for Professionals

Monday, March 20, 7:00 pm
Mayo Medical Sciences Building
(321 3rd Avenue SW, Rochester)

☞ Pizza & socializing at 6:30 pm ☜

Nominees & Volunteers Needed

IEEE Southern Minnesota Section officers will be elected for the 2000-2001 term at our May section meeting. The following four officers will be elected: chair, vice chair, secretary, treasurer.

If you are an IEEE member in good standing, and if you would like to run for one of these offices – or nominate someone else – please contact section chair Rob Harveland (rharvela@vnet.ibm.com, 253-0780).

We are also actively looking for volunteers to serve on various committees

IEEE Electro / Information Technology Conference in June

IEEE Region IV (our region) is presenting the IEEE Electro/Information Technology conference – the first technical conference focusing on research in electrical and computer engineering as it pertains to information technology. The conference will be held June 8-11 in Chicago. For more information, see the conference website, www.ewh.ieee.org/reg/4/eit2000.htm.

Top 20 Engineering Impacts, continued

- 6) Radio and Television – dramatically changed the way the world received information and entertainment.
- 7) Agricultural Mechanization – leading to a vastly larger, safer, less costly food supply.
- 8) Computers – the heart of the numerous operations and systems that impact our lives.
- 9) Telephone – changing the way the world communicates personally and in business.
- 10) Air Conditioning and Refrigeration – beyond convenience, it extends the shelf life of food and medicines, protects electronics, and plays an important role in health care.
- 11) Interstate Highways – 44,000 miles of U.S. highway allowing goods distribution and personal access.
- 12) Space Exploration – vastly expanded humanity’s horizons and introduced 60,000 new products on Earth.

- 13) Internet – a global communications and information system of unparalleled access.
- 14) Imaging Technologies – revolutionized medical diagnostics.
- 15) Household Appliances – eliminated strenuous, laborious tasks, especially for women.
- 16) Health Technologies – mass production of antibiotics and artificial implants led to vast health improvements.
- 17) Petroleum and Gas Technologies – the fuels that energized the 20th century.
- 18) Laser and Fiber Optics – applications are wide and varied, including worldwide communications, non-invasive surgery, and point-of-sale scanners.
- 19) Nuclear Technologies – from splitting the atom, we gained a new source of electric power.
- 20) High Performance Materials – higher quality, lighter, stronger, and more adaptable.



**The Institute of Electrical
and Electronics Engineers, Inc.
Southern Minnesota Section**

Dated Material -- Please Deliver Immediately
www.ewh.ieee.org/r4/southern_minnesota

Non-Profit
U.S. Postage Paid
Permit #511
Rochester, MN

IEEE Southern Minnesota Section Board Members

<i>Chair</i>	Rob Harveland	253-0780	rharvela@vnet.ibm.com
<i>Vice Chair</i>	Juan Arevalo	253-5483	juan@us.ibm.com
<i>Secretary</i>	Bill Gorder	253-1409	w.gorder@ieee.org
<i>Treasurer</i>	Steve Kerchberger	253-4047	s.kerschberger@ieee.org
<i>Comm/SP Society</i>	Scott Dahl	253-0428	ssdahl@us.ibm.com
<i>Computer Society</i>	Duane Wenzel	253-1035	d.j.wenzel@ieee.org
<i>Computer Society</i>	Jason Clegg	253-2369	j.clegg@ieee.org
<i>Gold Chair</i>	Susan Funk	253-5339	funks@us.ibm.com
<i>Membership</i>	Ron Jensen	253-3887	r.jensen@ieee.org
<i>Newsletter</i>	Chris Kimble	253-7571	c.kimble@ieee.org
<i>Pre-College</i>	Vince Lynch	433-0456	vmlynch@smig.net
<i>Student Activities</i>	Paul Dahlinger	253-1769	dahlinger@aol.com
<i>Webmaster</i>	Diane Manlove	253-7613	dmanlove@ieee.org