

Neel, Willard Wayne - Professor

Education

- Ph.D. - Mechanical Engineering, North Carolina State University, 1990
- M.M.E. - Mechanical Engineering, North Carolina State University, 1984
- M.A. - Physics, University of South Florida, 1970
- B.A. - Physics, University of South Florida, 1967

Years of Service

- **Years of service: 21**
- Original Appointment: Assistant Professor, Major, August 1989
- Academic Rank: Associate Professor, Lt. Colonel, August 1992
- Professor, Colonel, August 1996

Experience

- 1985-89, Graduate Teaching Assistant, North Carolina State University
- 1984-85, Visiting Assistant Professor of Mechanical Engineering, Boston University Overseas Program
- 1983-84, Graduate Teaching Assistant, North Carolina State University, Raleigh, N.C
- 1982-83, Instructor of Physics, Wake Technical College, Raleigh, N.C.
- 1971-82, Instructor of Physics, Craven Community College, New Bern, N.C.
- 1963-69, Electronics Technician, United States Naval Reserve

Consulting

- Acoustical consulting for the Rockbridge County SPCA, summer 1994

- Dana Corporation, Spicer Axle Division, Buena Vista, VA., Study title "Spatial Distribution of Unassembled Component Parts and Finished Axles at Spicer Axle/Dana Corporation", Fall 1994.
- Designed and helped build a large hinged Trebuchet at VMI. Spring FTX 1997.
- Filmed a commercial for the Miller Brewing Company using the VMI Trebuchet. Los Angeles, California. Spring 1998. Trade show in Houston Texas with trebuchet. Consultant for the operation of a half sized mobile trebuchet used throughout the summer over most of the southeast for company promotion, summer 1998.
- WGBH/PBS Boston - NOVA Program filmed in Scotland on trebuchet building, "Medieval Siege". Fall 1998. Program aired February 2000.
- WGBH/PBS Boston – Consulted about the possibility of doing a program on Greek/Roman siege warfare; specifically the Siege of Syracuse (312 BC), at which Archimedes was the defender. Funding for this program never came through. Spring 2001.
- BBC London - Consulted about the building a very large Greek ballista, which would throw a 180 lb stone, for program called "Building the Impossible" Summer 2001.
- Preliminary proposal for a straw distribution system to be used for erosion control by the U. S. Forest Service. Summer 2001.
- Consulted with a Japanese Public broadcasting company which was doing several programs about the history of China. In one of these programs Genghis Khan is attacking a Chinese city and he uses trebuchets that were designed by two Arabic engineers. The program director asked me to design the trebuchets (I sent two versions), Summer 2003.
- Expert witness in a homicide trial in Bristol, England. A person was killed by being thrown by a trebuchet. First trip Spring 2003, and the trial in the Spring of 2004.
- Discovery Channel – Canada. A short documentary was filmed at VMI on the operation of a trebuchet. This was to precede the release of the movie Timeline, which shows some trebuchets bombarding a castle. To explain the operation of a trebuchet I was filmed in my office and interviewed by phone. VMI's small trebuchet was filmed on the parade ground. A short video clip was on the internet (Discovery Channel – Canada) for several months, 2004.
- Discovery Channel – USA. This was a 2 hour program to air right before the new Brad Pitt movie about Troy was released in May 2004. One of the theories about the Trojan War was that the Trojan horse was actually a battering ram and this was the part that I was involved with. The filming, of my segment, took place at a studio in Valencia, California. This program aired on 12 May and 16 May of 2004.
- Checked the dynamic design of a large trebuchet built for a castle in England. Summer 2005.

- Consulted about doing a program for the History Channel called “Man, Moment, Machine”. This will be about the siege of Tyre by Alexander the Great and his use of ballistae. Spring 2006.
- Consulted with the history Channel/Lion Rock about the use of trebuchets in a film about Marco Polo and Kublai Khan. This will be a two hour program. The basic research on this has been already done for the enquiry from the Japanese Public Broadcasting network. Spring 2006.

Registration

- Registered Professional Engineer - Virginia (#22980) , January 27, 1992

Recent Publications

- Neel,W.W., “Design Considerations for a Large Trebuchet”, Timber Framing, 44, June 1997.

Professional Societies

- American Society of Mechanical Engineers
- American Society of Engineering Educators - VMI Campus Representative
- Acoustical Society of America
- American Association of Physics Teachers
- Sigma Pi Sigma
- Tau Beta Pi
- Phi Kappa Phi
- PI Tau Sigma

Honors and Awards

- Faculty Advisor Award from Region IV ASME to attend Winter Annual Meeting of ASME held in Anaheim, California, 1992.

- ASME Region IV Outstanding Student Section Faculty Advisor 1993.

Institutional & Professional Service

- Member - VMI Library Committee (1992-present).
- Member - VMI Regimental Promotion Board (1995-1997)
- Member - VMI Self Study Committee - Subcommittee on Cadre (1994-1996)
- Member - VMI Tenure and Promotion Committee (1993-1995, 2001-2003)
- Member - VMI Writing Across the Curriculum (WAC) (1996-present)
- Member – Grievance Hearing Panel (2003 –present)
- Commandant's Tactical Staff - Adviser to Golf Company (1991-1992), Bravo Company (1992-1994), Alpha Company (1994-1998)
- Class of 1998 Adviser (1994-1998)
- Chairman - Department Long Range Planning Committee (1990-present)
- Chairman - Department Newsletter (1990-2000)
- Chairman - Department Professional Development (1994-1995)
- Chairman – Department Mechanical Systems Committee (2005-present)
- Member - Department Computer Committee (1989-present)
- Member - Department Laboratory Committee (1989-present)
- Advisor - ASME Student Section (1989-present)
- Advisor - VMI Hop and Floor Committee (1990-1998)
- Hospitality chairman for VAS/VJAS Annual Meeting held at VMI, 1995
- Faculty Social Club - Treasurer (1991-1993), President (1993-1998)
- Faculty Adviser to the VMI Pipes and Drums (1996 – 2002)

Professional Development Activities

- ALGOR seminar Bethesda Maryland 1997
- Several Writing Across the Curriculum Workshops
- Smart Classroom Training 2005