

## Sonya L. Cooper Ph.D., P.E.

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Current Position Academic Department Head, Professor  
Department of Engineering Technology & Surveying Engineering  
New Mexico State University, Las Cruces, NM

Areas of Specialization/Interest Construction & Structural Engineering  
Materials Science  
Historic Preservation

### EDUCATION

**Doctor of Philosophy** (June 2000), New Mexico State University.  
Interdisciplinary Program: Materials Science. “*Methods for Predicting Probability of Current Transmission through two Alodine™ Coated Aluminum Alloy Plates in Contact.*”  
Graduate level courses in mechanical engineering, chemical engineering, and physics concerning material behavior at an atomic level.

**Master of Engineering** (May 1984) University of Virginia.  
Civil Engineering: Structural Option. Graduate Teaching Assistant.

**Bachelor of Science** (May 1982) North Carolina State University.  
Civil Engineering: Construction Option. Graduated Cum Laude, Member Chi Epsilon and Tau Beta Pi Honor Societies.

### PROFESSIONAL EXPERIENCE

**Registered Professional Engineer, State of New Mexico.**

**Academic Department Head & Professor, Department of Engineering Technology and Surveying Engineering, New Mexico State University, Las Cruces, NM Jan. 01, 2005 - Present. (Interim 05-06). Promoted to Full Professor April 2006.**  
Oversee management for department of 450 students, 14 faculty, 8 staff, and student employees. Please see *Activities* section for accomplishments.

**Associate Professor, Department of Engineering Technology, New Mexico State University, Las Cruces, NM 1999 – Dec.30, 2005.**  
Program coordinator and instructor for civil engineering technology courses. Facilitator of curriculum design and implementation. Involved in numerous research and project areas with emphasis in construction, structural design and analysis, materials, and historic preservation. Faculty advisor to the AGC and NASA Micro gravity student chapters. URA faculty advisor. Curriculum and career advisor to

## Professional Experience (Cont'd)

students in the Engineering Technology Department and other departments. Involved with national and university committees that emphasize curriculum and faculty development.

**Assistant Professor, Department of Engineering Technology, New Mexico State University, Las Cruces, NM 1994 -1999.**

Developed a concentration in construction technology and revised the civil engineering technology curriculum to reflect industry trends and constituent needs. Fulfilled numerous teaching, service, and research activities to lead to promotion to associate professor and tenure.

**Project Manager, US Army Community and Family Support Center, Washington DC 1992-1994.**

Managed 60 major construction projects (\$111 Million dollar design and construction program) for the US Army, in the continental US and overseas. Assisted in developing and implementing a new design/build system for the Army. Authorized and provided funding for Non Appropriated Funded (NAF) construction projects. Reviewed and approved all major decisions in design and construction. Provided Headquarters Staff oversight of projects from inception to construction completion.

**Manager, Lucon Construction Company, Annandale VA 1991-1992.**

Developed and managed a program in full scale general contracting for a new construction company. Solely responsible for all estimating and project designs/solutions. Supervised in-house construction crews and subcontractors. Performed structural inspections for residential and commercial buildings.

**Owner, Mastermind Enterprises, Arcola VA 1990-1991.**

Construction management, general contracting, engineering services. Consultant for land development studies and existing structure surveys. Contracted by architects for structural calculations and details. Provided construction management services to owners of commercial projects. Served as general contractor for various residential projects.

**Structural Engineer, Leo A. Daly, A/E, Washington, DC 1989-1990.**

Responsible for all aspects of analysis, design, calculations and detailing for commercial buildings, including new work, renovations, and preservation. Inspected construction progress to ensure conformance with construction drawings. Performed site investigation surveys for existing conditions. Prepared detailed reports assessing structural systems and building components.

**Civil Engineer/Project Manager, Rinker-Detwiler & Associates, P.C., Manassas, VA 1985-1989.**

Responsible for planning and designing all aspects of site development for residential subdivisions, and commercial and industrial sites. Designed sanitary sewer systems, water systems, grading plans, storm water systems, storm water containment, erosion control, roadway plan and profiles, pump stations, etc. Developed and negotiated contracts and analyzed budgets. Directly responsible for cost containment throughout contract scope.

## ACTIVITIES

### A. PROFESSIONAL (See also list of projects page 5)

- Structural engineering services
- Construction engineering and management services
- Engineering consultant for historic preservation projects
- Engineering consultant for architectural firms
- Engineering consultant for geotechnical firms
- Advisor to neighborhood groups concerning development impact
- Extension and Outreach services for the university and community in the above areas
- Member: American Society of Civil Engineering
- Member: American Congress on Surveying and Mapping
- Member: Associated General Contractors
- Member: Association for Women in Science

### B. TEACHING, SERVICE, SCHOLARLY ACTIVITY

#### Courses Taught

- Highway Technology
- Site/Land Development
- Senior Internship
- Soils & Foundation Technology
- Advanced Construction Technology
- Cost Estimating and Scheduling
- Applied Structural Design I & II
- Senior Seminar
- Introduction to Engineering Technology
- Statics and Dynamics
- Construction Methods and Communications
- Concrete Technology
- Building Utilities

#### Workshops/Seminars Organized and/or Taught in

- Women's Studies programs
- ADVANCE seminars
- New Mexico Space Grant Consortium programs
- Various invited lecture appointments
- Assessment workshops

#### Advisor/Mentor Service

- Curriculum Advisor ('94-present)
- Crimson Scholar Advisor ('94-present)
- Student Advisor - Tau Alpha Pi ('95-'98)
- Student Advisor - SWE ('97-'02, 07-present)
- Student Advisor-Associated General Contractors student chapter ('96-present)

## Activities (Cont'd)

- Student Advisor-C-9 (formally KC-135) student micro gravity experiments ('01-present)
- Student Advisor-Undergraduate Research Assistantships program ('98-present)
- Student Advisor-Associated Schools of Construction student bidding competition ('02-present)
- Career advisor ('94-present)
- Junior and Senior Faculty Mentor (formal arrangements) (2002-present)

## Committees

### ❖ **University**

- Food Technology Program Development (07-present)
- Women's Study Steering Committee (07-present)
- Leadership Institute Committee (Aug. 06-present)
- Plan 2 Plan: Strategic Plan Process Committee (Spring 2007)
- Doña Ana Community College: Civil Drafting Advisory Committee (00-present)
- Doña Ana Community College: Pre Architecture Advisory Committee (00-04)
- X-PRIZE Symposium Steering Committee (Summer and Fall 05)
- ADVANCE Committee (02-08)
- ADVANCE Faculty Development (03-07)  
Chair: Sept 2004- Sept 2005
- ADVANCE Research Committee (02-07)
- ADVANCE Transition Committee (07-08)
- University Gender Equity Committee (2002)
- Dennis Darnell Award Committee (Spring 02)
- Department of Physics Search Committee (2002-2003)

### ❖ **College**

- Numerous Masters and PhD Committees
- Chair-Civil Engineering Dept. Head Search (Dec 07- present)
- Strategic Plan and Faculty Evaluation Form Committee (Oct 04-Jan 08)
- Engineering Academic Council Committee (01 - 03)
- Chair-Survey Engineering Dept. Head Search (2001)

### ❖ **Department**

- Recruitment Committee (Jan 05-present)
- P&T Committee (member Fall 99-Jan 05)  
Chair (Fall 01-Jan 05)
- Search Committee (3 positions) 2001-2004

## Activities (Cont'd)

### ❖ **Professional Society**

ASCE Committee on Technology Curriculum & Accreditation (CTC&A)

Past Chair: Sept 2006-present

Chair: Sept 2005 - Sept 2006

Secretary: Sept 2004- Sept 2005

Member: Sept 2002-present

Corresponding Member: 2001-2002

### Other

❖ **TAC of ABET Commissioner**, Summer 2005-present (1-2 visits/year plus report time, time spent with programs, and summer commission meetings)

❖ **EAC and TAC ABET Evaluator**, 2001-present (4-day commitment 1/year)

❖ **ASEE, Technology Interface Paper reviewer**

❖ **Peer review of P&T packages** (Nationally)

❖ **Text Book reviewer**

❖ **Project Lead the Way Facilitator**

❖ **Recent projects that I have contributed to in the form of conditions assessments, structural analysis, structural design, civil design, preservation plans, stabilization work, reports.**

Chihuahueta Community Center, Roswell NM

Fort Bayard Nurses/Captains Quarters, Fort Bayard NM

Hatch flood structures, Hatch NM

Human Systems Research CCC building, Las Cruces NM

Isleta Pueblo St. Augustine, Isleta NM

Lincoln Ave Center Block Building, Las Vegas NM

Manzano Day School, Albuquerque NM

Mesa Theater, Roy NM

Ruidosa Church, Ruidosa TX

San Elizario Church, San Elizario TX

San Miguel Church, Santa Fe NM

Sands Dorsey Building - Tucumcari NM

Zia Middle School, Las Cruces NM

Amador Hotel, Las Cruces NM

Pueblo of Acoma, Acoma NM

Branigan Cultural Center, Las Cruces, NM

Premier Fitness Center, Alamogordo NM

Socorro Mission, Socorro TX

Saint James' Episcopal Church, Las Cruces NM

Fountain Theatre, Mesilla NM

Aztec Library, Aztec NM

El Portal Hotel, Raton NM

## Activities (Cont'd)

### ❖ **Accomplishments led as Department Head**

Increased department enrollment from 350 to 450 since 2005  
Implementing new degree and major: Information and Communication Technology  
Developed proposal, sought approval, and implementing new major in Information Engineering Technology  
Implementing new minors in renewable energy technologies and information technologies  
Developed proposal and seeking approval process for bachelors degree in construction management  
Implemented new assessment process and policy  
Developed business plan for Engineering Extension  
Developed IT structure for the college  
Developed new computer lab and new electronics lab  
Articulation with 13 community colleges  
Partnership with food industry, college of Agriculture, college of Engineering to build an interdisciplinary program and assist the food industry with projects  
Implemented surveying engineering merger into department  
Built partnerships with numerous employers and industry representatives