

## VITA

### PERSONAL:

Name: Jose' Joaquim D'Arruda  
DOB: August 4, 1942  
Married to Dorothy Tompkins  
3 Sons; Peter 40, Robert 38, Jeffery 36

Web Homepage: <http://www.uncp.edu/home/jose/>

### EDUCATION:

Ph.D. University of Delaware, June, 1971  
Major: Theoretical Physics  
M.S. University of Delaware, June, 1968  
Major: Physics  
B.S. Lowell Technological Institute, June, 1965  
Major: Physics and Mathematics

### PROFESSIONAL RECORD:

Chair Chemistry and Physics Department, University of North Carolina at Pembroke, 1981-2004  
Professor of Physics, University of North Carolina at Pembroke, 1978-present  
Director of UNCP Astronomical Observatory 2005-present  
Visiting Professor of Physics, Univ. of Delaware, 1979-80  
Associate Professor of Physics, University of North Carolina at Pembroke, 1974-78  
Assistant Professor of Physics, Univ. of Wisconsin Center, 1971-74  
Assistant Dean, Univ. of Wisconsin Center, 1973-74  
Visiting Scientist at Oak Ridge National Laboratory, worked with Dr. Frank Gifford on Computer Solutions for Atmospheric and Chemical Pollutants. Summers 1975 and 1976  
Visiting Scientist at Battelle Northwest Laboratory, worked with Dr. George Slinn on Atmospheric Physics. Summer 1974  
Visiting Scientist at Argonne National Laboratory, worked with Dr. Chris Wahl on Ab-initio Computer Calculations for Complex Chemical Molecules. Summer 1972 and 1973  
Teaching Assistant in Physics and Mathematics, Univ. Delaware 1965-71

### LISTINGS INCLUDE:

American Men and Women in Science  
Who's Who in America  
Who's who in Technology

## **PROFESSIONAL SOCIETIES:**

American Physical Society  
American Association of Physics Teachers  
President Elect 2007-8; North Carolina American Association of Physics Teachers  
Vice President 2006-7; North Carolina American Association of Physics Teachers  
University Representative 2004-6; North Carolina American Association of Physics Teachers  
American Association for the Advancement of Science  
American Astronomical Society  
Sigma Xi  
N.C. Academy of Science (charter member of Energy Committee)  
Director of region 6 N.C. Student Academy of Science 1983-88, 2001-Present  
N.C. Science Teachers Association  
National Science Teacher Association

## **UNIVERSITY-WIDE SERVICE INCLUDES:**

Director and Founder of University of North Carolina at Pembroke Regional Science Fair, 1982-present  
Faculty representative to UNC Faculty Assembly, 1997-2003  
Proposed the Creation of a new Standing Committee (Technology) to UNC Faculty Assembly  
First Chair of the Technology committee of UNC Faculty Assembly 2000-2003  
Coordinate efforts for Faculty involvement in the Teaching and Learning with Technology annual conference, 2000-2003  
Achieved ACS (American Chemical Society) Accreditation for our Chemistry program, 2000  
Interviewed for UNC-TV documentary “ A Budget Crisis” shown across the state, 2000  
Interviewed for UNCP science building needs shown to state legislators, 2000  
MC for retirement dinner for Chancellor Oxendine, 1999  
Coordinated and hosted Consortium of NASA and NRTS partners on campus, 4/9/99  
Coordinated effort to bring a Nationally known Astronomer (Dr. Gary Steigman) to UNCP  
Interviewed Dr. Steigman on UNCP-TV, 2000  
Requested and received permission to change the name of our department from Physical Science to Department of Chemistry and Physics, 1998  
Chaired effort to develop UNCP’s first degree program in Applied Physics, 1997-99  
Presented a speech as Faculty Representative during UNCP Convocation, September 4, 1997  
Addressed the graduation class during commencement ceremonies as the Faculty Representative, May 16, 1998  
Addressed the graduation class during commencement ceremonies as the Faculty Representative, May 1997  
Presented a speech on the occasion of the UNCP Sampson-Livermore Library Dedication, April 22, 1998  
Presented a speech on the occasion of the renaming the Dial Humanities Building  
Delivered a speech in Charlotte to the committee selecting a new President for the UNC System, November, 1996

Delivered the citation during graduation honoring Col. William McArthur for an honorary doctorate degree, May, 1996

Delivered a speech as Faculty Representative at the UNCP Name Change Ceremony, July 6, 1996

Attended NACME/NASA Forum '99, "NACME 25th Anniversary", Orlando, Fl., September 24

Attended NACME/NASA Forum 2000 "Affirming Diversity: Real Commitment, Real Results", Long Beach, Cal., October 25-28, 2000

Attended NC-TAP Proposal development workshop for faculty at predominantly minority institutions, Winston Salem State, October 3-4, 1998

Participated in admission recruiting in Charlotte, NC, March 28, 1998

Panelist on NASA Preservice Teachers Education Conference at Las Vegas, April 15, 1998

Coordinated visits of several schools to UNCP to learn about Careers in North Carolina, 1997-2000

Biotechnology Industry-partnership between UNCP, Novel Pharmaceuticals and Abbott Labs-with Dr. Holmes and Dr. Mandjiny. March 17, 1998

Participated in Poetry Reading program sponsored by Sigma Tau Delta and CMA department, April 8, 1998

Presented lecture to over 500 participants of UNCP Regional Science Fair on Astronomy. "The Birth and Death of a Star." 1997

Judge for Robeson County Quiz Bowl, 1993-2001

Produced a set of video tapes used by high school teachers in Robeson County for the purpose of improving the Principles of Technology course, 1997-2000

Presented program on science fairs to the Fairmont PTA meeting, November 1997

Guest on TV show "Impact" with Dr. Oxendine, September 5, 1996

Chancellor Scholar program member, 1978-present

Director UNCP Pre-Engineering program, 1984-present

## **COMMITTEES INCLUDE:**

Chair of the Faculty Senate, 1978-79, 1996-97, 1997-98

Chair of selection committee for Dean A&S, 1999-2000

Chair of selection committee for Associate Vice Chancellor, 1998-99

Chair of faculty Awards committee, 1999-2000

Chair of the Allocation committee of UNCP Foundation, 1997-2001

Chair of SACS Committee on Organization & Administration, 1999-2000

Chair of the Technology committee of the UNC Faculty Assembly, 1999-2001

Director on new Biotechnology Center.

Title III Advisory Committee, 2000

Member of New Science Building Planning Committee, 2000

Member of the Faculty Senate, 1993-present

Member of the Governance committee, 2000

Member of the Faculty Welfare Committee, 1994-1996

Member of the Academic Affairs Committee, 1993-1994

Member of Executive Committee, 1996-1998

Member of the Election Committee, 2000  
Member of the Summer School Committee, 1999-2000  
Director of the UNCP NASA Scholarship award committee, 2000-2001  
Served on Campus Hearing board, September 1997  
Member of admission's office NASA Scholarship award committee  
Member of University Wide Faculty Benefits Study group at General Administration. Attended 5 meetings at GA during the months of December 1998-January 1999  
Chancellor Selection Committee, Executive Secretary, 1978-79  
Vice Chancellor Selection Committee, Chairman, 1977-78

### **PATENTS AND INVENTIONS:**

Light Intensity Discrimination Apparatus, Patent rights given to the Wisconsin Research Association.

### **GRANTS INCLUDE:**

"NC\_PIMS", NSF Grant for 21.4 million, Co-PI with NC Mathematics and Science Education Network, 5 year grant to improve Math/Science in rural eastern NC.

"R.O.B.O.T.S." (Robotics: Opportunities for Building Outstanding Talent in the Sciences); NSF Grant for \$800,000, Oct. 2006, Co-PI with NC Mathematics and Science Education Network, Multi-year grant to develop interest in Math/Science for 6,7 and 8 grade students in NC

"NASA Grant", March 2006, \$20,000 North Carolina Space Grant Consortium, Provide funds for Student undergraduate research.

"NASA Grant", \$15,000, Summer 2006, "Using Computers and Computer Modeling in Astronomy", Workshop for Math and Science Teachers.

"Acquisition of PROMPT (Paramount-based Robotic Optical Monitoring and Polarimetry Telescopes): Gamma-Ray Bursts as Probes", UNCP student will get ~2% PROMPT time; Grant submitted by Daniel Reichart, UNC-CH; \$736K, 2004-8, we are a minor partner

"Eisenhower Grant", January, 2002, to conduct workshops for Physics Teachers, with Drs. Ritter & Dooling, \$30,000.

"Eisenhower Grant", January, 2001, to conduct workshops for Physics Teachers, with Drs. Ritter & Dooling, \$30,000.

"Eisenhower Grant", January, 2000, to conduct workshops for Physics Teachers on Modeling in Science, \$30,000,

"Eisenhower Grant", January, 2000, to conduct workshops for Earth Science Teachers, \$30,000

"Eisenhower Grant", January, 1999, to conduct workshops for Physical Science Teachers, \$30,000

"Eisenhower Grant", January, 1998, to conduct workshops on using Computers with Laboratory equipment for teachers, \$30,000.

"Eisenhower Grant", January, 1997 to conduct workshops on using the Internet in the classroom for Purnell Swett teachers, \$30,000.

ATOM (Accentuating Technical Opportunities for Minorities) "Department of Education Grant" with Norfolk State University for \$45,000 to present workshops for high school physics teachers, Feb. 2000.

*American Astronomical Society Grant* to bring a distinguished speaker to campus, \$1000, March, 2000

"*NASA Grant*" with ECSU/ MUSPIN for \$13,000. This grant was used to purchase 6 computers for our labs. Nov.1999

"*N.C. Department of Transportation grant*" for \$3500 to bring a high school student from Purnell Swett HS to do research. May 2000.

"*NASA Grant*" for \$3000 to offer research experience to one of our physics students. June 2000

"*NASA Grant*" with Dr. Holmes, for \$2500 to bring a distinguished visiting scientist speaker to campus. Feb. 2000

"*A Preservice/Inservice Model for Teaching Integrated Math/Science with Technology*", NASA and EOP, with FSU; \$627,000, March 1997

"*Minority University-Space Interdisciplinary Network*", NASA, 1995-1999, \$50,000

"*Minorities in Science and Mathematics Education Program*", NASA/MASTAP 1994-1997, \$527,000

"*Interfacing Computers to Physics Experiments*", NSF Grant, 1988-89, \$27,500

"*Microcomputer Workshop for Teachers*", NSF Grant, 1981-82

"*Citizens Workshops on Energy and the Environment*" ERDA, Presented over 300 Energy Conservation workshops across the state of North Carolina, 1976-79

"*Research Travel Grant*" Oak Ridge Associated Univ., 1975-79

"*Summer Teachers Workshop on Aerospace Education*", NASA, 1972

## **HONORS AND AWARDS:**

Recipient of the 2007 UNC Board of Governors Award for Teaching Excellence

Appointed by the UNC Board of Governors to Education Advisory Board for North Carolina School of Science and Math, 2003-2007.

Elected Vice President of the *NC American Association of Physics Teachers*, March 2006-7  
Regional IV director of the North Carolina Student Academy of Science.

Distinguished Service to Education Award, *North Carolina Science Teachers Association*, 2000  
2000 Nominee for Governor's Award for Excellence for Public Service.

Nominated for the Board of Governors Teaching Excellence award 2001

UNCP-Dial Service Award, 1998

Elected to the American Association of Physics Teachers Committee on Minority in Physics, 1999-2002

Science Fair award, March, 1993

Elected to the Education Committee of *abcd* (Association of Better Computer Dealers), 91-92

Nominee for University of North Carolina's Garner Award, 1978

Pembroke State University Yearbook Dedication, 1975

Excellence in Teaching Award, Univ. of Delaware, 1971

Member of Pembroke State University Foundation Board of Directors.

CUR Institutional liaison for Pembroke State University

## **WORKSHOP PRESENTED:**

These are week long workshops I presented with Dr Robert Panoff of the Shodor Educational Foundation which focus on Modeling Methods in Physics, support from an NSF grant.

The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science; July 16-22, 2006; San Diego State University. San Diego, CA  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science, June 4 –10, 2006, Western Kentucky University, Bowling Green, KY  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science,, July 17-23, 2005, Houston Community College, Houston, Texas  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science, May 29-June 4, 2005 High Point College, High Point, NC  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science, July 11-17, 2004, Centenary College. New Jersey .  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science, July 21-27, 2003, ; San Diego State University. San Diego, CA  
The National Computational Science Institute (NCSI), workshop for college teachers on Computational Science, July 20-26, 2002, Rochester Institute of Technology, New York

#### **PUBLICATIONS/PRESENTATIONS:**

Presented a paper on “ *International Collaboration: A strategy for increasing the pipeline for secondary physics teachers*”. NC-AAPT meeting at Elon University, Fall 2006

Presented a paper on “*Symmetry, Noether’s Theorem and Conservation Laws in Physics*”, NC-AAPT meeting at UNCP, October, 2005

Presented a paper on “*Using Interactive Physics to Model, Simulate and Explore Physical Phenomena*”, NC-AAPT meeting at UNCP, October, 2005

Presented a paper on “*The North Carolina Space Grant (NCSG) Consortium to add more members*”, NC-AAPT meeting at UNCP, October, 2005

Presented a paper on” *CCD Astronomy at a Small College Observatory*”, NC-AAPT meeting at Belmont Abbey College, Charlotte, NC, March, 2006

Presented a seminar on “*Computational Physics for Physics Educators*”, Tomsk University, Siberia, Russia, April, 2006.

*Science and Technology in Robeson County*, to be published as a chapter in book “*One Land Three Peoples*”, 3<sup>rd</sup> editions, Carolinas Press, 2005

Presented a paper on Einstein and the World Year of Physics at the NCAS meeting Meredith College, March 2005

Paper presented at the TLT meeting in Raleigh, “Enhancing Student Success: Aligning Computational Content and Skills in Introductory Courses Across North Carolina”; March, 2005

American Association of Physics Teachers regional meeting in Winston Salem, NC, *Computer Modeling in Physics* March 2002

Teaching and Learning with Technology/Faculty Assembly conference in Greensboro, NC, *Computer Modeling in Physics* ,April 2002

American Association of Physics Teachers National meeting in San Diego, Cal., Presented an invited four-hour Workshop on *Computer Modeling in Physics*, January 2001

North Carolina Science Teachers convention in Greensboro, Presented a paper on *Computer Modeling in Physics*, November 2000

UNCP Life of the Mind Seminar, Presented Seminar on “*State of the Universe*”, November, 2000

Applied Geography Conference, Paper on *Carolina Bays* with Drs. Edgell and Ross, Tampa, FL., October 11, 2000

“*State of the Universe*”, talk given to Rotary Club of Lumberton, November, 2000

American Association of Physics Teachers National meeting in Canada, Presented a Workshop on *Computer Modeling in Physics*, August 2000

American Association of Physics Teachers sectional meeting, Presented an invited Workshop on *Computer Modeling in Physics*, CUNY, New York, NY, March, 2000

National Science Teachers Meeting in Orlando FL., Presented paper on *Supernova 1A*, April, 2000

North Carolina Science Teachers convention in Greensboro, Presented paper on *Supernova 1A*, November 11, 1999.

UNCP Faculty Forum, Presented Seminar on *Supernova 1A and our Accelerating Universe*, 4/6/99

New England American Association of Physics Teachers, Presented an invited Workshop on *Computer Modeling in Physics*, Northfield, Vermont, November 6, 1999.

South Carolina American Association of Physics Teachers, Presented a paper on *Computer Modeling in Physics*, Charleston SC, October 23, 1999.

North Carolina American Association of Physics Teachers, Presented a paper on *Computer Modeling in Physics*, Boone NC, October 9, 1999

North Carolina Science Teacher convention in Greensboro, Presented a workshop on *Potpourri of Physics Demonstrations with better than a 50/50 chance of working*”, November 14, 1997

National Science Teachers' convention in Las Vegas, Presented a workshop on *Potpourri of Physics Demonstrations with better than a 50/50 chance of working*, April 17, 1998.

Panelist on NASA Preservice Teachers Education conference at Langley Research Center in Norfolk, Virginia, November 1996

Presented a workshop for NASA in Baltimore, Maryland to help minority schools prepare grants, October 4-5, 1996

"*Torque or Horsepower-A Study of Fast Cars*". SOARS Conference, Nov.10 1994

"*Using Computers for Data Acquisition, Graphing and Demonstration in the Physics Class*". The Journal of North Carolina Teachers Association, Vol. II no.1, fall 1993

“*Demonstrations Using Liquid Nitrogen*”, Paper delivered at the North Carolina Science Teachers Meeting, Asheville, NC, Nov. 1979

*Chaired Panel on Energy at the 17<sup>th</sup> Annual Conference on Recent Advances in Physics*, UNC-Chapel Hill, Dec. 1978

“*Demonstrations Using Liquid Nitrogen*”, Paper delivered at the North Carolina Science Teachers Meeting, Greensboro, NC, Nov 1978

"*A Simple Derivation of the Diffusion Equation from the Fokker-Planck Equation Using Perturbation*", AM. J. Phys.46, 392, (1978)

“*Energy and Our Future*”, talk given to North Carolina Science Teachers Association Meeting, East Carolina University, Greenville, NC, Nov. 19, 1977

“*Energy and the Environment*”, talk presented at American Association of Physics Teachers meeting at UNCC, Charlotte, NC, April 16, 1977

“*Energy and the Environment*”, talk presented at North Carolina Academy of Science meeting

at Greensboro, NC, April 1977

"*Asymptotic Solutions of Equations which Describe Dispersion of Chemical Pollutants*", Paper delivered at American Physical Society Meeting, New York, NY, Feb. 1976

"*Asymptotic theory of the linear transport equation for small mean free paths*", Phys. Rev. A, Vol. 13, No. 6, May 1976

"*Asymptotic Solutions of a Linear Transport Equation*", Paper delivered at the American Physical Society Meeting, Washington, DC, April 1975

"*Asymptotic Solutions of a Simple Urban Dispersion Model for Chemical Pollutants*", NOAA, September 1975.

"*Fragmentation of  $\text{BeF}_2^+$  as inferred from Ab-Initio Computer Calculations*", Bull. Am. Phys. Soc. 19, 292, (1974)

"*Physics Teachers-Who Needs Them*", Paper delivered at Southern Illinois University at Edwardsville, November 1973

"*A Combined Physics and Psychology Laboratory Session*" Paper delivered to Wisconsin Association of Physics Teachers at UW-Stout, April 1973

"*Experimental Psychology in the Physics Lab.*", Division Two Newsletter, October, (1973)

"*Stroboscope and the Inertia Balance*", The Physics Teacher, May (1973)

"*A Self-pace Program of Instructions at a Two Year Institution*", The Physics Teacher, March

(1973)

"*High-Temperature Quantum Corrections to the Second Virial Coefficient for a Hard-Core-Plus-Attractive-Well Potential Model*", Phys Rev. A .1, Vol.7, No.2, 820 (1973)

"*Self-Pace Physics*", Paper delivered to American Association of Physics Teachers at Albany, NY, June 1972

"*Quantum Corrections to the Second Virial Coefficient for Triangle-Well Potential*", Bull. Am. Phys. Soc. 17, 614 (1972)

"*New Answers to Old Questions*" example cited in "Committee on Physics in Two Year Colleges Newsletter". May (1972)

"*Quantum Corrections to the Second Virial Coefficient with an Application to the Hard Core Plus Square-Well Potential at High Temperatures*", Phys. Rev. A1, 1791-1802 (1970)

"*Quantum Corrections to Virial Coefficient*". Am. Phys. Soc. 1, 646 (1968)

### **Energy Related Presentations include:**

"*Our Energy Future*", talk given to Beta Sigma Phi Sorority, Lumberton, NC, Jan. 11, 1977

"*Energy and the Environment*", talk given to Lions Club of Laurinburg, NC, Jan. 25, 1977

"*Energy Futures*", talk given to Kiwanis Club of Pembroke, NC, Feb. 1, 1977

"*Energy and the Family*", talk given to Southeastern Regional Conference on Family Economics and Home Management, Greensboro, NC, Feb. 4, 1977

"*Energy and the Environment*", talk given to Duke University Student F.A.S.S.T. group, Durham. NC, Feb 7, 1977

"*Energy Saving Ideas for Home Builders*", talk given to Lumberton Realtors Association, Lumberton, NC, Feb. 8, 1977

"*Energy and the Environment*", talk given at Energy Conference for Charlotte Area Teachers,

sponsored by Charlotte-Mecklenburg school system, Charlotte, NC, Feb, 15, 1977  
“*Energy Choices*”, talk given to Kiwanis Club of Lumberton, NC. , Feb. 17, 1977  
“*Energy Saving Tips*”, talk given at Robeson Technical Institute, Lumberton, NC, Feb. 28, 1977  
“*Energy and Conservation*”, talk given to Junior Service League of Lumberton, NC, Feb. 28, 1977  
“*Energy and the Environment*”, talk given to Kiwanis Club of Fayetteville, NC, March 3, 1977  
“*Energy Conservation Workshop*”, talk given at Cumberland County Public Library, Bordeaux Branch, Fayetteville, NC, March 4, 1977  
“*Energy and the Environment*”, talk given at Richmond Senior High, Rockingham, NC, March 7, 1977  
“*Energy and Man*”, talk given at Rotary Club of Hamlet, March 8, 1977  
“*Energy and Our Future*”, talk given at Rotary Club of Marshfield, NC, March 10, 1977  
“*Energy and the Environment*”, talk given at First Methodist Church of Pembroke, NC, March 14, 1977  
“*Energy and Your Future*”, talk given at Whiteville Senior High School, Whiteville, NC, March 18, 1977  
“*Energy and Elementary School Children*”, talk given at Covington Street Elementary School, Laurinburg, NC, March 22, 1977  
“*Energy and the Environment*”, series of talks given at Women’s Club of Fayetteville Annual Convention, Fayetteville, NC, March 26, 1977  
“*Energy and Our Future*”, talk given to Rotary Club of Laurinburg, NC, March 29, 1977  
“*Energy and Children*”, talk given at Washington Park Elementary School, Laurinburg, NC, April 8, 1977  
“*Energy and Man*”, talk given to Department of Sociology and Anthropology seminar, University of North Carolina Charlotte, Charlotte, NC, April 12, 1977  
“*Energy and the Environment*”, talk given to Scoutmasters Roundtable Meeting, Laurinburg, NC, April 13, 1977  
“*Energy and the Environment*”, talk given at Duke University School of Forestry, Durham, NC, April 20, 1977  
“*Energy and Our Future*”, talk delivered to Wilmington League of Women Voters, Wilmington, NC, April 21, 1977  
“*Energy Workshop*” talk given at Scotland Memorial Library, Laurinburg, NC, April 26, 1977  
“*Energy and Our Future*”, talk given at Fayetteville Academy, Fayetteville, NC, April 29, 1977  
“*Energy and Our Resources*”, talk given to Kiwanis Club of Cheraw, SC. May 6, 1977  
“*Energy and Our Future*”, talk given to Rotary Club of Gastonia, NC, May 12, 1977  
“*Energy and the Environment*”, talk given to A & T Energy Education Workshop for Teachers, NCA&T, Greensboro, NC, June 20, 1977  
“*Energy and our Future Choices*”, talk given to 1977 North Carolina 4-H Congress, N.C. State University, Raleigh, NC, July 26, 1977  
“*Energy and the Environment*”, talk given to “Energy Economics and the Environment Workshop for Teachers”, East Carolina University, Greenville, NC, August 5, 1977  
“*Energy and the Environment*”, talk given at World Dynamic Faculty Seminar, Pembroke State University, Pembroke, NC, Oct. 14, 1977  
“*Energy and the Environment*”, talk given to Lumberton Jaycees, Lumberton, NC, Oct. 19,

1977

- “Energy and Man”*, talk given to Prospects of the Future Honors Class, Pembroke State University, Pembroke, NC, Oct. 24 & 26, 1977
- “Energy and our Future”*, talk given to Energy Education Conference sponsored by North Carolina State Department of Public Instruction, Statesville, NC, Nov. 1, 1977
- “Energy Choices”*, talk given to Duke Symposium, “Focus: Energy”, Durham, NC, Nov. 2, 1977
- “Energy and the Environment”*, talk given to North Carolina Home Economic Association, Royal Ville Hotel, Raleigh, NC, Nov. 3 & 4, 1977
- “Energy and Our Future”*, talk given to Cardinal Gibbons Memorial High School, Raleigh, NC, Nov. 4, 1977
- “Energy and Our Future”*, talk given to Parkton Ruritan Club, Parkton, NC, Nov. 10, 1977
- “Energy and Man’s Choices”*, talk given to Alpha Kappa Chapter of Omicron NU, Dept. of Home Economics, UNC-Greensboro, Nov 16, 1977
- “Energy and the Environment”*, talk given to Madisen Senior High School, Madisen, NC, Nov. 17, 1977
- “Energy and the Environment”*, talk given to Southview Senior High School, Hope Mills, NC, Nov. 22, 1977
- “Energy and Our Future”*, talk given to Department of Agricultural Information Seminar, NCSU, Raleigh, NC, Dec. 12, 1977
- “Energy and Our Future”*, talk given to Western North Carolina American Institute of Chemical Engineers, Asheville, NC, Dec 14, 1977
- “Energy and Power Companies”*, talk given to Blue Ridge Electric Membership Company Information Officers, Lenior, NC, Dec. 15, 1977
- “Energy and the Environment”*, talk given to Maiden Senior High School, Maiden, NC, Dec. 15, 1977
- “Energy and the Environment”*, Program presented on WGHP-TV-8, Mid-Day Piedmont Show, Dec. 19, 1977
- “Energy and Our Future”*, talk given to Laurinburg Women’s club, Jan. 11, 1978
- “Energy and Environment”*, talk given to students at Durham Academy, Jan. 27, 1978
- “Energy and Our Future”*, talk given to Duke Student group, “Community Environmental Education”, Jan. 28, 1978
- “Energy and Our Future”*, talk given to American Nuclear Society, Raleigh, NC, Feb. 19, 1978
- “Energy and our Environment”*, talk given to students at Southside Middle School, Rowland, NC, March 14, 1978
- “Energy and our Future Choices”*, talk given at Spring Energy Symposium at Meredith College, Raleigh, NC, March 29, 1978
- “Energy and the Environment”*, talk given to North Carolina Home Economic Association, Asheville, NC, April 28, 1978

**Other Interests include:** Restoring old Porsche; Sailing; Woodworking; Model Trains ,Antique furniture restoration, History of Civil War ;