

# Interdisciplinary Studies

I have done some studies in various fields besides physics:

- Philosophy
  - [Priorities in a Society](#)
  - [Evolution of Beliefs](#), a sermon delivered at Christ Episcopal Church, Blacksburg VA on 25 February 2001
  - [Links for The Bible According to Einstein](#)
- [L. David Roper letters and editorials in The Roanoke Times](#)
- [Compilation of Blacksburg Cool Cities Messages](#)
- Future
  - [Triple Threats for the Human Future: Will Civilization Arrive?](#) (4 Megabytes)
    - [Triple Threats for the Human Future: Forward, Preface, Contents and Figure Captions](#)
  - [Human Intelligence Evolution](#)
  - [Silicon Intelligence Evolution](#)
  - [Peak Fishing](#)
  - [Peak Agriculture](#)
  - [World Population Projection](#)
  - [Twenty-First Century Collapse](#)
- [Goiânia Radiation Incident](#)
- [Life Expectancy in the United States](#)
- [Politics](#)
  - [U.S. is Becoming a Third-Rate Country](#)
- [Economy](#)
  - [Prices](#)
  - [High Gasoline Price is Good](#)
  - [Financing Highways](#)
  - [Prime-Rate Projection](#)
  - [Stock Market as States' Changes](#)
  - [Income Distribution in the United States](#)
  - [Income Distribution Complex Web](#)
  - [Currency System Based on Energy Consumed](#)
  - [Steady-State Economy](#)
- [Correlation Studies of Academic Excellence and Big-Time Athletics](#), L. David Roper and Keith Snow, International Review of Sport Sociology 3 (11) 1976 pp. 57-69. (940 kbytes)
- [Radioactive Weapons](#)
- [Minerals Depletion](#) (many web pages)
- [World Ammonia Production](#)

- **Energy** (many Web pages)
  - [The Solar Future: Why Solar Energy Must Run the World](#)
  - <http://roperld.com/science/SolarPanelsParkingLots.pdf>
  - [Home Energy Usage \(TED, The Energy Detective\)](#)
  - [House Energy Renovation](#)
  - [Energy Conservation for Renters](#)
  - [Peace and Energy](#)
  - [Landscape Destruction due to Energy Extraction](#)
  - [Energy Investments for Buildings and Communities](#)
  - [Coles Hill Uranium Mine Depletion Study](#)
  - [World Wind](#)
  - [Blacksburg Wind & Solar Power Educational Project](#)
  - [Toward U.S. Energy Independence](#)
  - [Electricity Production in the United States](#)
  - <https://www.ucsusa.org/resources/barriers-renewable-energy-technologies>
  - [https://www.eia.gov/outlooks/aeo/assumptions/pdf/table\\_8.2.pdf](https://www.eia.gov/outlooks/aeo/assumptions/pdf/table_8.2.pdf)
- [http://www.roperld.com/science/minerals/Oil\\_USGasolinePricesPrediction.htm](http://www.roperld.com/science/minerals/Oil_USGasolinePricesPrediction.htm)
- [YMCA Solar Greenhouse](#)
- Roper House
  - [Roper Photovoltaic System](#)
  - [Roper Rheem Hybrid Hot Water Heater](#)
  - [Roper House Battery Backup System](#)
  - [Roper Light Tube](#)
  - [Recommendations for LED light bulbs](#)
  - [Composting the Easy Way](#)
  - [Rain Barrels](#)
  - [Dry Wells](#)
- Environment
  - <http://roperld.com/science/2024EnvironmentalEnergyIssues.pdf>
  - **Global Warming** (many web pages)
  - [Global Heat Pollution](#)
  - [Global Warming Mathematics](#)
  - <http://roperld.com/science/GlobalWarmingData.pdf>
  - [Ocean Currents](#)
  - [Graphically Speaking Project about the Environment](#) Explanation about a single graph
  - [Curbside Composting](#)
  - [Green Businesses in the New River Valley of Virginia](#)
  - [Crops Production in the World and the United States](#)
  - [Solitary Bees](#)
  - [Water](#)
  - [Aquifers in the United States](#)
  - [Guarani Aquifer in South America](#)
  - [Entropy, Complexity and Sustainable Development](#)
  - [Some Earth Limits](#)
- [Major Ice Ages](#) (many web pages)
- [Sunspots Numbers Fit](#)
- [Solar Eclipses in Virginia Recorded by Roper PV System](#)
- Weather
  - [Evaporation and Precipitation Versus Latitude](#)
  - [Precipitation Patterns due to Global Heating](#)
  - [Precipitation Rates Versus Latitude and Longitude](#)
  - [Extreme Weather](#)

- [Extreme Weather: Tornadoes](#)
- [Droughts in the United States](#)
- **Mathematics**
  - [The Hyperbolic Tangent World](#) (Many examples in nature)
  - [The Verhulst Function](#)
  - [Realistic Functions for Nonlinear Systems](#)
  - [Model for mutual positive feedback for two variables](#)
  - [Using Sigmoid and Double-Sigmoid Functions for Earth-States Transition](#)
  - [Mathematical Analysis of Covid-19 \(coronavirus19\) in USA and other countries](#)
  - [Spherical Bessel Functions](#)
  - [Solar Insolation Computer Codes for Windows](#)
- **Nerve Excitation**
  - [Nerve Excitation](#)
  - [Rationalizing the Hodgkin-Huxley Equations for Nerve Excitation](#)
  - [Theory of Excitable Membranes](#)
- [Genetics Theories of Homosexuality](#)
- [Fuel Cells are not Pollution Free: Where Will the Water Go?](#)
- **[Hybrid and Electric Vehicles](#)**
  - <http://roperld.com/science/AllCarsElectric.pdf>
  - <https://ark-invest.com/articles/analyst-research/finding-signal-in-noisy-auto-data>
  - <http://roperld.com/science/ChargingBEVsFacts.pdf>
  - <http://roperld.com/science/BatteryElectricVehicles2024.pdf>
  - <http://roperld.com/science/SignificanceTeslaSuperchargerBlacksburg.pdf>
  - <http://roperld.com/science/ShouldIDriveAPHEV.pdf>
  - [Musings about Electric Vehicles](#)
  - <http://roperld.com/science/My5BEVs.pdf>
  - [Vehicle Miles Traveled \(VMT\) in the United States](#)
  - [Blacksburg Tesla Supercharger](#)
  - <https://cleantechnica.com/2022/07/27/ucs-study-shows-lifetime-ev-emissions-are-50-lower-than-conventional-vehicles/>
  - <https://www.ucsusa.org/resources/driving-cleaner>
  - [PlugAndCharge](#)
  - [PHEVs; Charging a PHEV](#)
  - [FederalTaxCredits](#)
  - [GBE M20 folding electric-assisted bicycle](#)
  - <http://roperld.com/science/ElectricBicyclesForNRV.pdf>
- [Interstate Railway System for the United States](#)
- [The Cordless Revolution](#)
- [Electromagnetic Spectra of Light Bulbs](#)
- [Homo sapiens Events](#)
- [Green or Natural Burial](#)

- **Health**

- [RET Proto-Oncogene \(Chromosome 10\) and Medullary Thyroid Cancer](#)
- [Spondylolysis and Spondylolisthesis](#)
- [Trochanteric Bursitis](#)
- [Lumbar Decompression \(Laminectomy\)](#)
- <https://www.verywellhealth.com/right-bundle-branch-block-rbbb-1745785>
- [A mathematical analysis of Covid-19 virus pandemic](#)
  - [Virginia state analysis](#)
  - [New York state analysis](#)
- [Talk about SETI](#) (Search for Extra-Terrestrial Intelligence)

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<http://roperld.com/science/RoperResonance60thAnniversary.pdf>