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| **Education** | May, 2016: B.S. Physics w/ Optics Concentration, University of New Mexico   * Honors, Cum Laude   August, 2015: A.S. Physics, Central New Mexico Community College |
| **Research** | **Spring 2016-Present:** PhD Student UNM-Mechanical Eng. (computational physics really)   * GRA-research appointment: Theoretical Div3-LANL, development of numerical solutions of turbulent reactive multi-phase fluid flows; KIVA codes.   **2014-Spring 2016:** UG Research Assistant, Department of Physics, University of New Mexico   * Member of DOE/LANL CAPTAIN (Cryogenic Apparatus for Precision Tests of Argon Interactions with Neutrinos) Collaboration   <http://p25ext.lanl.gov/~lee/LArTPC/LANL_LDRD.htm>   * UG Honors Thesis: Research and development leading toward the Deep Underground Neutrino Experiment (DUNE) * Development of off-line software for LAr-TPCs to increase ability to reject backgrounds such as neutron spallation in events that mimic electron neutrino interactions <http://nngroup.physics.sunysb.edu/captain/trac/wiki/WikiStart> * Optimized tuning algorithms for cluster finding and event reconstruction. Detector simulations run on PDSF, NERSC’s Physics Computing Cluster   **Spring 2014-Present**: Joint undergraduate research project funded partially by an academic grant awarded by the *Arts & Sciences Undergraduate Research Initiative* conducted in the Mechanical Engineering Department at the University of New Mexico  **Publication:** N. Fathi, B. Philipbar, P. Vorobieff (2015).  *Partially Wetting Rivulet Sensitivity Analysis.* Manuscript in preparation  **Summer 2014:** TRMC-STEM Internship Program at White Sands Missile Range   * Engineered R2AEC (Real Time Range, Azimuth & Elevation Control) system using Qt-Creator a cross platform application and C++. The implementation of R2AEC saved ~1,875 man-hours/year spent establishing wireless links for Optics missions alone at WSMR. * Verified proof of principle for Magdalena Ridge Observatory (MRO) as an optical asset to track Navy Black Brant missions   **Spring 2011:** Year-round internship: Advanced Materials Laboratory with Sandia National Laboratories, Obtained DOE-L security clearance |
| **Computer Skills** | * **Programming Languages:** C, C++, Linux, FORTRAN, Visual Basic, Mathematica, MATLAB, PERL, BASH, and other languages/applications/platforms used less often * **Design and Simulation**: SOLIDWORKS, AUTOCAD, COMSOL, AUTODESK, numerical DSP techniques, data-flow programming, networked applications, large-scale simulations, image processing |
| **Awards** | August 6th, 2014: *Certificate of Achievement in Recognition of Outstanding Accomplishments and Contributions of Professional Efforts in Support of the Range Operations Directorate, White Sands Missile Range.* Presented by Paul D. Mann, Executive Director WSMR  March 17th, 2014: *Undergraduate Research Funding Award.* Presented on behalf of the Physics and Astronomy Committee, University of New Mexico. Project: Meandering Rivulets in Vertical Flow   * May 2016, UG – Honors Thesis Award, UNM Physics and Astronomy Dept. UG Honors Thesis: Research and development leading toward the Deep Underground Neutrino Experiment (DUNE) |
| **References** | Michael S. Gold  Professor of Physics  Department of Physics and Astronomy  Albuquerque, NM 87106  Email: mgold@unm.edu  Ph. 505.238.6155 |
|  | David B. Soules  Vice President of Engineering at TRAX International  Las Cruces, New Mexico Area | Defense and Space  Email: [david.b.soules.ctr@mail.mil](mailto:david.b.soules.ctr@mail.mil)  Ph. 575.678.5834 |
|  | Peter Vorobieff  Professor Mechanical Engineering/Adjunct Prof. Mathematics (UNM)/Assistant Chair of Facilities  University of New Mexico  Albuquerque, New Mexico 87131  Email: [kalmoth@gmail.com](mailto:kalmoth@gmail.com)  Ph. 505.277.8347 |