

## 2000 SURF Student Projects

STUDENT	INSTITUTION	ADVISOR	PROJECT TITLE
Rachael Anderman	Hamilton College	Fred Wietfeldt	Construction of a Beta Spectrometer for Use in Determining the "a" Coefficient Neutrons
Lisa Anthony	Drexel University	Simon Szykman	Design Repositories: Information Search and Retrieval
Peter Bradford	Brigham Young University	Paul Huffman	Reducing the Constant Background Due to Gamma Ray Scintillations in Acrylic in an Experiment to Measure the Neutron Lifetime Using Magnetically Trapped Ultracold Neutrons
Gretchen Campbell	Wellesley College	Paul Lett	Production of Weakly Bound Ground State Molecules Using Photoassociation
Deborah J. Caton	Frostburg State University	Leticia Pibida	A Glimpse into Gamma Spectroscopy at the NIST Physics Laboratory
Addie E. Citchens	Jackson State University	Angela Davies Chris Evans	Radius of Curvature Measurements Using Interferometry
Michelle Clarke	Montgomery College	Joannie Chin	Effects of Intense Heat Flux Exposure on Glass/Vinyl Ester Composites
Jon Collins	Appalachian State University	Robert Shull	Hysteresis and Magneto-aftereffect of AlNiCo
Sarenee L. Cooper	Southern University and A&M College	Marc Desrosiers	A Study of the Accuracy of the Standard Calibration Curve Method for Radiation Accident Biodosimetry
Elizabeth Cummings	Brigham Young University	Kenneth Inn	Peak De-convolution Techniques for Analyzing Am-241 and Am-243 Alpha Spectrum
Abraham Daiub	University of Minnesota - Twin Cities	David Vanderah	Synthesis of $\text{CH}_3(\text{OCH}_2)_x\text{OCH}_2\text{COOH}$ , where $x = 4$ to $8$ , for Surface Functionalization of Biomimetic Surfaces
Mavis Donkor	Bethune-Cookman College	Charlie Tarrio	Computer Control of Multilayer Deposition Chamber
Allison Desiree Dupuy	Wellesley College	Kris Helmerson Simone Kulin	Three-Dimensional Manipulation of Microscopic Objects by Optical Tweezers and Laser Scalpel
Wilma Febo-Ayala	University of Puerto Rico	David Vanderah	Synthesis of Amphiphilic 1-Thiahexa(ethylene oxide) Glyceryl Diethers and Diesters
Laura Feeney	Miami (Ohio) University	Ed Williams	The SI Realization of Forces at the Nano-Newton Level
Alexandra Ford	Massachusetts Institute of Technology	Thomas Moffat	Investigation of the Microstructural and Magnetic Properties of $\text{Co} \parallel \text{GaAs} (001)$ Thin Films and $\text{Co} \parallel \text{Cu} \parallel \text{GaAs} (001)$ Multilayers Grown by Electrodeposition
Phillip Gruber	University of California - Irvine	Dennis Rich	Studies Towards Optimization of the Magnetic Environment of Polarized $^3\text{He}$ Cells
Malcolm Heard	Southern University and A&M College	Michelle O'Brien	Energy Response of Ionization Chambers
Jeff Hodos (REU Program)	Richard Montgomery High School	Robert Shull	SRM 772a Nickel Sphere
Tim Hoffman	Bucknell University	Simon Szykman	Verification of the Information Flow Model for Product Design

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Eranga Tyrrol Crossley Jayewardene	Montgomery College	Brad Damazo	Develop Labview Data Acquisition Software for Real Time Monitoring of a Scanning Electron Microscope for Diagnosing Performance Deficiencies
Ari Kay	University of California - Irvine	Eric Lin	POSS (Polyhedral Oligometric Silsesquioxane): Does It Affect Epoxy Resins?
Parker Kuhl	Miami (Ohio) University	John Lawall	Mode Matching into a Scanning Fabry-Perot Cavity
Lisa Larrimore	Swarthmore College	Jeanne Houston	Characterization and Calibration of Optical Trap Detectors
Joe Leach	Miami (Ohio) University	David Jacobson	Neutron Interferometry and Optics
Tammy Lindsey	Appalachian State University	Terrell Vanderah	Subsolidus Phase Relations in the Ternary System BaO-Al <sub>2</sub> O <sub>3</sub> Nb <sub>2</sub> O <sub>5</sub>
Cristina S. Luis	University of Rochester	Karl Murphy	Ladar Calibration and Topography Measurements for a Robotic Vehicle
Sean Merritt	University of California - Irvine	Eric Shirley	Pseudopotential Inversion
Virginia Lea Miller	Rider University	Terrell Vanderah	Subsolidus Phase Relations in the Ternary Systems MgO-LaO <sub>1.5</sub> -TiO <sub>2</sub> and MgTiO <sub>3</sub> -LaO <sub>1.5</sub> -CaTiO <sub>3</sub>
Michelle Anne Millican	Southern University and A&M College	Brian Zimmerman	Liposome Encapsulation of Beta and Alpha Emitting Radionuclides as Potential Agents Against Cancer
Timothy A. Myers	James Madison University	Eric Vogel	The Effects of Ionizing Radiation on the Reliability of 3.2 nm Gate Dielectrics
Quang T. Nguyen	University of Virginia	Gery Stafford	Recrystallization Behavior of Electrodeposited Copper
Chris Nowakowski	Bucknell University	Edward Amatucci	Calibration and Control of a Six Degree of Freedom Micro Positioner
Rob Owen	University of Utah	Garnett Bryant	"On the Electrodynamics of Scanning Probes" or "Finite Elements ad Infinitum"
Ken Podolak	Rochester Institute of Technology	C. Cameron Miller	LED Spatial Intensity: From the Ground Up
Reginald Quinn	Jackson State University	David Feder	Three Dimensional Visualization of Bose Einstein Condensates Using Data Explorer with Red and Blue Anaglyph Glasses
Lenibel Santiago	University of Puerto Rico	Dennis Minor	Evaluation of Instrumental Methods to Determine the Densities of Ceramic Materials
Mark R. Scafonas	Saint Joseph's University	John Gillaspay	Radiative Lifetime Measurements of Forbidden Transitions on the NIST EBIT
Wendy Shefelbine	Washington University - St. Louis	Matt Davies	Thermal Imaging of Machining
Sara Smoot	Brigham Young University	Carl Williams	Quantum Computing and Atom Confinement
Daryl Spencer	Jackson State University	Charlie Glinka	Relating Nanostructure to Drag-Reduction in Fluid Flow
Stuart Taylor	Bucknell University	Daniel Sawyer	Beyond Small Plastic Rulers: An In-depth Look at Laser Tracker Measurement Uncertainty

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Bryan Thibodeau	University of Rochester	Stephen Balakirsky	Using Holographic/Quantum Neural Networks for Tall Grass Classification
Matt Tundermann	Syracuse University	Ted Vorburger John Song	Measuring Bullet Signature Profiles
Elaine Ulrich	Wellesley College	Laura Lising	Oven Design and Characterization for Use in Quantum Computing Apparatus
Benjamin D. Van Durme	University of Rochester	Peter Mell	A Feasibility Study on the Use of Genetic Algorithms in Intrusion Detection Systems
Michael Vassar	Pennsylvania State University	Tom Lebrun	Soft Lithography: Nanostructures on Polymers
Scott White	Appalachian State University	Michael Mitch	Oriental Anistropy in the Emissions from Radioactive Seeds Used in Prostate Cancer Brachytherapy
Eva Wilcox	Brigham Young University	Rob Vest	Characterization of Novel VUV Photodiodes
Liang Li Wu	University of California - Irvine	Boualem Hammouda	The Change of A Polymer Blend's Cloud Point
Diana Zeiger	University of Maryland - Baltimore County	Ming Tung	The Chemistry of Calcium Phosphates (Surface Properties and Molecular Modeling)
Todd Zeitler	Alfred University	Sheldon Wiederhorn	Near the Static Fatigue Limit of Soda Lime Silicate Glass