

2003

SURF STUDENTS

by Laboratory

Student	University	Talk Title	NIST Lab
Matthew Cass	Appalachian State University	An Investigation Into Current Residential Fire Codes in Regards to Safety	BFRL
Hiruy Dafla	Montgomery College	Determination of the PSD of Gypsum in Cement	BFRL
Kiri Feldman	University of Maryland, College Park	X-Ray Absorption Measurements of Water Loss in Curing Mortar Samples	BFRL
Joseph Fradella	University of Texas, Austin	Development and Construction of a Thermally-Driven Outdoor Sealant Testing Device	BFRL
Jason Holzmuller	Iowa State University	Chemical Modifications of TiO ₂ Nanoparticles for the Improvement of Dispersion in Acrylic Urethane Polymer Matrices	BFRL
Therasa Kim	Santa Monica College	Methodologies for Measurement of TiO ₂ Photoreactivity	BFRL
Alan King	Western New England College	Extensible Markup Language for Data Storage and Retrieval	BFRL
Jessica Kratchman	University of Maryland, College Park	Modeling Smoke Detectors	BFRL
Long Nguyen	University of Rochester	Protective Clothing Training Simulator	BFRL
Mary Philip	Bryn Mawr College	Evaluation of a Novel Moisture Transport Model for Epoxies and Sealant Materials	BFRL
Ian Rafferty	Saint Mary's College of Maryland	Flame vs. Heat Release Rates	BFRL
Julius Rainey	Tougaloo College	RoboCrane: Advancement in Construction Site Technologies	BFRL
Ji-Yong Shin	Santa Monica College	Concrete Microstructure and Aggregate Shape on the Millimeter Scale	BFRL
Claribel Acevedo Velez	University of Puerto Rico	How Accurate are Calculations from Molecular Mechanics	CSTL
Kelly Anderson	University of Maryland, College Park	Organic Monolayers on Silicon(111)	CSTL
Stephen Arico	University of Notre Dame	Absorption Coefficient Measurements of Aerosol Particle Agglomerates	CSTL
Megan Daschbach	Mount Saint Mary's College	The Ultraviolet Absorption Cross Sections of 1,5-Hexadiyne: Temperature Dependent Gas Phase Measurements	CSTL
Erin Ferguson	Clemson University	Studying Particle Release Induced by Air Jets: A Critical First Step in Explosive Particle Detection for Airport Security	CSTL
Ryan Hill	North Carolina State University	Improving the Performance of Point-of-Care and Bio-Warfare Detection Methods that Use Portable Fluorescence Spectrometers	CSTL
Randy Jackson	City University of New York, Hunter College	The Study of Nanofabricated Surfaces for Protein Immobilization	CSTL
Salita Kaistha	Ursinus College	Design and Synthesis of a DNA-binding Protein Module	CSTL
Anna Kalema	Mount Saint Mary's College	Degradation of PCBs in Marine Sediment by Electron-Beam Technology	CSTL

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Ted Malliaris	Harvard University	Temperature Gradient Focusing for the Separation of Proteins	CSTL
Jennifer Muth	James Madison University	Synthesis of X-Ray Photoelectron Spectroscopy Lineshapes Using MATLAB	CSTL
Jessica Naff	Appalachian State University	Defining the Relationship Between Surface Composition and Protein Adsorption	CSTL
Hilary Samples	Vanderbilt University	Spatially Controlled Biomolecular Deposition in Microfluidic Systems	CSTL
Greg Scott	Davidson College	Comparison of Computational Methods for Electron-Impact Ionization Cross Sections	CSTL
Shalini Varghese	University of California, Irvine	Depth Profiling of Polymeric Samples Using SF ₅ ⁺ Primary Ion Bombardment	CSTL
Melanie Bernard	Vanderbilt University	Electroplating Fabrication Approach to Nanometer-Scaled Fluidic Restrictions	EEEL
Kour Thay Chau	California Polytechnic State University, San Luis Obispo	Evaluation of (VUV-SE) Ellipsometer and Optical Properties of High-k Hafnium Aluminate Oxides	EEEL
Shizhi Chen	State University of New York, Binghamton	Mapping eBusiness Specifications	EEEL
Melissa Chun	Brown University	Analysis of Ozone-enhanced Oxidation for Device Passivation Layers	EEEL
Tam Hoang Duong	University of California, Irvine	A New IMPACT in Silicon Carbide Power MOSFETs	EEEL
Casey Hardy	Western Washington University	A Self Balancing Power Calibration System	EEEL
Peyman Kangavari	Santa Monica College	CMOS MEMS Test Structures for the Measurement of Young's Modulus	EEEL
Daniel Kim	Carnegie Mellon University	Creating a Web-based Aid to Monitor NIST and Customer Standards	EEEL
Mark Matarazzo	Rensselaer Polytechnic Institute	Towards Attofarad (10 ⁻¹⁸ F) Capacitance Measurements: A Comparison of Capacitance Sensor Designs	EEEL
Curtis Mead	University of Minnesota	A Crossed-wire Molecular Electronic Test Structure	EEEL
Ravi Patel	University of California, Irvine	A Method to Achieve CD Reference Materials with 100 nm Linewidths	EEEL
Michael Powers	University of Maryland, Baltimore	Modeling Near-Interfacial Defects in High-k Dielectrics	EEEL
Rebecca Stamilio	Appalachian State University	Determining Minority Carrier Diffusion Length of GaN Using Surface Photovoltage Spectroscopy	EEEL
Iris Wong	University of California, Berkeley	Integration of Microcontroller for Embedded Gas Sensor System-on-a-Chip	EEEL
Aolat Adedji	University of Maryland, Baltimore	Digital Rights Management	ITL
Mackenzie Britton	Southern Methodist University	Autonomic Service Registration for the Service Location Protocol	ITL
Adaazi Esiobu	University of California, Irvine	Binary Analysis of High Volume Data Sets	ITL
Akash Garg	University of California, Irvine	Verifying and Standardizing Functionality of Forensic Hardware Devices	ITL
Liliya Krivulina	University of California, Berkeley	Planning on Traffic Growth in Optical Access Networks	ITL

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Andrew Lane	University of Kentucky	Simulating Quantum Circuits at the Gate-Level:QCSim	ITL
Shirin Meheraban	University of Maryland, College Park	Studying Protein Sequences Using Bioinformatics	ITL
Van Molino	Princeton University	A Differential Equation Approach to the Determination of the DMA Transfer Function	ITL
Sheehan Olver	University of Minnesota	Accurate Three Dimensional Graphs of Special Functions	ITL
Samuel Small	College of William and Mary	A Starvation-Free Preference-Based Job Scheduler for the ScreenSaver Science Project	ITL
Richard Su	University of Maryland, College Park	Performance and Cost Tradeoffs for Use of Omnidirectional vs. Unidirectional Regenerators in Optical Networks	ITL
Iris Tang	Massachusetts Institute of Technology	A Study of the Bystander Role in HRI	ITL
Thomas Walsh	University of Maryland, Baltimore	VOIP Security	ITL
Chiu Yeung	University of Maryland, College Park	Testing for the Common Intersection Point of Lines	ITL
A. Craig Beal	Western New England College	Optical Tweezers for Nanomanufacturing	MEL
Dmitriy Bepalov	Drexel University	Automated Software Integration	MEL
Chad Bryant	University of North Carolina, Charlotte	The World is Getting Smaller, Step by Step	MEL
Anthony Downs	University of Maryland, College Park	Air-Ground Sensor Registration	MEL
Justin Gillespie	Michigan Technological University	Ensuring the Consistency of World Model Knowledge in Autonomous Navigation	MEL
Joseph Kopena	Drexel University	Semantic Integration Through Invariants	MEL
Jonathan Lee	University of California, Berkeley	Interferometry: PSI and VSI Discrepancies	MEL
John Lippiatt	Rensselaer Polytechnic Institute	Optical Tweezers Tip-Tilt Mirror Analysis	MEL
Cary Maunder	Oregon State University	Development of Simulation of Job Shop Processes	MEL
Alice Nguyen	University of California, Irvine	Temperature Control in the Molecular Measuring Machine	MEL
Patrick Riechl	Brown University	EMC Threading	MEL
Keriel Rodriguez Vélez	University of Puerto Rico	Condition-based Monitoring of Equipment via Web-based Smart Sensor	MEL
Robert Seymour	Miami (Ohio) University	Atomic Resolution Electromechanical Null Detection	MEL
Matthew White	Vanderbilt University	Adaptive Control for the Enhanced Machine Controller	MEL
Eric Zhang	University of California, Irvine	Visualization and Segmentation of Objects Based on Riegl Data	MEL
Seth Avery	Marietta College	Corrosion as a Mechanism of Crack Tip Blunting in Glass	MSEL
Marina Chumakov	Lehigh University	Strength of Silicon in the Region of Small-Scale Flaws	MSEL

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Brian Cordes	Worcester Polytechnic Institute	Crack Growth Studies in Indium Phosphide	MSEL
Matthew Handler	Massachusetts Institute of Technology	Flow Simulation for the Development of Microfluidic Devices	MSEL
Emil Hernandez-Pagan	University of Puerto Rico	Combinatorial Approach to Electrodepositing Copper-Cobalt Alloys	MSEL
Elizabeth Hopkins	Reed College	Structure, Chemistry, and Dielectric Properties of $Ba_3MgSb_xNb_{2-x}O_9$ and $Ba_3NiSb_xNb_{2-x}O_9$ Ceramics	MSEL
Ben Langhorst	Case Western Reserve University	Optical Study of Shear-Induced Structure of Polymer-Dispersed Carbon Nanotubes	MSEL
Joe Lee	Johns Hopkins University	An Investigation into the Corrosion Resistance of High Nitrogen Stainless Steel	MSEL
Sherry Lippiatt	Rensselaer Polytechnic Institute	The Use of Real-Time Polymerase Chain Reaction in Quantifying Inflammatory Responses to Biomaterials	MSEL
Katelyn Luedeke	Clemson University	Lightweight MgLi Alloys: The Future of Automotive Research	MSEL
Matthew Paoletti	Bucknell University	Characterization of Bioencapsulated Proteins	MSEL
Timothy Quarrick	University of Maryland, College Park	Sheet Metal Studies on Fe-base Alloy	MSEL
Erin Robertson	Appalachian State University	Surface Properties of Imidazoline Surfactants	MSEL
Andrew Rockwell	Johns Hopkins University	Analysis of Cell Membrane Peptides Via Small Angle Neutron Scattering	MSEL
Jamaal Sanders	University of California, Irvine	The Kinetics of Cluster Formation of Polyethylene Oxide in Water	MSEL
Evan Schwartz	James Madison University	Augmentation of Biopolymers for Tissue Engineering	MSEL
Alan Skaggs	Southern Methodist University	Ferromagnetic Resonance in Thin Magnetic Films	MSEL
Kyle Stemen	Kent State University	Computational Material Science Software Development	MSEL
Amanda Velazquez	Carnegie Mellon University	Polymorphic Phase transitions in the SrO-Li ₂ O-Nb ₂ O ₅ System	MSEL
Ramsey Zeitoun	University of Maryland, College Park	Development of a Bismuth Filter for Neutron Vibration Spectroscopy	MSEL
William Anderson	Gettysburg College	Fast Neutron Spectroscopy	PL
Ben Auerbach	Hamilton College	Transmittance of Fused Silica (SiO ₂) Windows	PL
John Patrick Casey	American University	Automation of Ionizing Radiation Measurements	PL
Eliza Morris	California State University, Sacramento	Locking to Absorption Lines for Laser Spectroscopy	PL
Jennifer Robinson	Cornell University	Preparation and Characterization of Nanostructured Surfaces for Surface Enhanced Raman Spectroscopy (SERS)	PL
Han Yong Ban	Pomona College	Spectroscopy of Er for Cooling and Trapping Purposes	PL
Leah Broussard	Tulane University	Systematic Studies in the emit Time Reversal Violation Experiment	PL
Maria Casper	University of Puerto Rico	Ray Tracing of a Fourier Transform Spectrometer	PL

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Daphne Chang	Duke University	Measuring the Neutron Lifetime Using Magnetically Trapped Ultracold Neutrons	PL
Lara Crigger	Rochester Institute of Technology	Properties of Polymersomes: A Practical Use of the Optical Tweezers and Scalpel	PL
Dustin Diez	Rhodes College	Selective Electro-deposition of Actinides	PL
Angel Fuentes-Figueroa	University of Puerto Rico	NIST Work in Radiation Detection for Homeland Security Applications	PL
Olivia Halt	Fordham University	Absolute Radiometry with Correlated Photons	PL
May Liang	University of California, Irvine	"In Search of a Hot Pig" - Thermal Detection of Radioactive Materials	PL
Aubryn Murray	Williams College	Two-beam Diffraction Patterns in a Nonlinear Medium	PL
Kathryn O'Connor	Miami (Ohio) University	Development of a Second Generation Dose-rate-type Water Calorimeter as a Primary Standard for Absorbed Dose in a ^{60}Co Beam	PL
Heidi Perry	University of Washington	Effects of Transverse Coupling on the Fragmentation of a Bose-Einstein Condensate in a Double-well Potential	PL
Jennifer Scheib	University of Colorado, Boulder	Characterization of LED Power	PL
Joshua Scheuermann	Saint Joseph's University	Prostate Cancer Seed Calibration and Characterization	PL
Marcos Vicente	University of Maryland, Baltimore	Plasma Diagnostics for a Dual Frequency Plasma Source	PL
Stacey Watts	Loyola College in Maryland	The Creation of a Successful Imaging System: A Step in Improving the Way We Study Plasma Arc Tubes	PL
Alex Wiener	Tulane University	Radiative Decay of the Neutron	PL

back cover with SURF 2003 student picture