



Idaho Engineering design expo 2001

May 4, 2001
Student Union Building

College of Engineering
College of Mines and Earth Resources
College of Art and Architecture



**Idaho Section
American
Nuclear
Society**





University of Idaho College of Engineering

David Thompson, Dean

With an engineering complex that encompasses three colleges, eight buildings and approximately 150,000 square feet of classroom and laboratory space, the University of Idaho has one of the largest engineering education centers in the Northwest. As much as our facilities, alumni networking and innovative curriculum contribute to our success, it is our world-class faculty and our outstanding students that set the University of Idaho apart from engineering programs at other universities.



University of Idaho College of Mines and Earth Resources

Earl Bennett, Dean

The School of Mines was established at the University of Idaho in 1917 to serve the needs of the Gem State's important mining industry. The college is housed in the Mines Building and the state-of-the-art McClure Hall, which was dedicated in 1995. A separate state agency, the Idaho Geological Survey, is an affiliated program.



University of Idaho College of Art and Architecture

Paul Windley, Dean

The mission of the college of Art & Architecture is to serve as Idaho's professional design and fine arts college. It provides a strong interdisciplinary design and visual art culture through professionally accredited curricula, allied research, and outreach opportunities, and to prepare graduates to serve society through their professional and community work.



Welcome to the 2001 Engineering Design Expo!

What a great opportunity to celebrate our students' achievements, and to see the exhibits from Engineering industry leaders.

Welcome also to our special guests who are on campus for Expo. Your continuing, generous support is integral to the success of all our programs at the University of Idaho.

We are officially rededicating the Gauss and Johnson Engineering Laboratories prior to Expo. If you have not yet seen the improvements made in these facilities, I invite you to do so. They are included in the Engineering Ambassadors tour.

Thank you for joining us. I hope you enjoy your time on our beautiful campus.

Sincerely,

Robert A. Hoover
President

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**Idaho
Engineering
design
Expo
2001**

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NIATT

National Institute for Advanced Transportation Technology

Our mission is to work with industry, government, and research institutions to develop, evaluate, and market technologies that will improve the design and operation of transportation vehicles and systems.

KEYNOTE ADDRESS

"Success and Failure in Design"

SUB Borah Theater 9:30

Henry Petroski, Ph.D., Duke University



The interrelationship between success and failure in engineering design will be examined through historical case studies spanning almost two millennia. These cases illustrate how seemingly minor and beneficial

alteration to a proven design can lead to disastrous results. The importance of looking at a design change as potentially creating an entirely new system, with entirely new failure modes, will be emphasized.

Dr. Henry Petroski currently holds the Aleksander S. Vesic Professorship and serves as the chairman of the Department of Civil and Environmental Engineering at Duke University. He is the author of over 70 refereed journal articles on mechanics and

design; writes for the American Scientist; and has authored several books about engineering and culture for a more general audience. His books include *To Engineer is Human*, which was adapted for a BBC television documentary; *The Pencil: Invention by Design: How Engineers Get from Thought to Thing*; *The Evolution of Useful Things*; *Design Paradigms*; and his most recent publication, *Engineers of Dreams: Great Bridge Builders and the Spanning of America*.

Dr. Petroski received his bachelor's degree from Manhattan College in 1963 and his Ph.D. from the University of Illinois at Urbana-Champaign in 1968. He was on the faculty of the University of Texas at Austin and on the staff of Argonne National Laboratory before joining the civil engineering faculty at Duke in 1980. He also holds a secondary appointment as professor of history at Duke.



**Idaho Section
American Nuclear Society**



The IANS is a non-profit organization dedicated to the advancement of science, engineering, and education pertaining to the peaceful uses of nuclear science and technology. The IANS sponsors a variety of education and public information activities, scholarships, and forums for scientific and technical information interchange on national and international levels.



PLENARY SESSIONS

"Future of U.S. Space Program"

Guion Bluford, Jr. (Colonel, USAF, Ret.)

NASA Astronaut (former)

SUB Borah Theater 11:00

"Guy" was the first African-American in space and will be speaking on his missions as well as his insights about our space program. Bluford graduate from Penn State University in 1964 as a distinguished Air Force ROTC graduate. He attended pilot training at Williams Air Force Base, Arizona and received his pilot wings in January 1966. He flew 144 combat missions, 65 which were over North Vietnam. He became a NASA astronaut in August 1979 and logged over 688 hours in space during four space flights where he served as a mission specialist. Guy left NASA in July 1993 to take the post of Vice President/General Manager, Engineering Services Division, NYMA Inc. in Greenbelt, Maryland.

"High Performance Work Environments"

Christiy Budenbender

SUB Borah Theater 1:00

Christiy currently works for the Office of Aerospace Technology at NASA headquarters. She is researching and managing the integration of technology, training, and new workspace design as part of the High Performance Work Environment (HPWE) Initiative. This project will allow for things such as the "holodeck-type" conference room, where people will be able to convey a three-dimensional image that will be difficult to distinguish from the physical object, without touching it.



Founded in 1991 through a NASA initiative, the NASA Idaho Space Grant Consortium (ISGC) is one of 52 national consortia. It focuses on providing NASA research and educational opportunities across the state of Idaho. The ISGC strives to increase student interest in science and aerospace fields, increase research collaboration with NASA across the state, and provide K-12 aerospace-focused programs for Idaho Students.



TOURS*

Campus Tour (9:30 and 1:30)

Get a glimpse of campus life at the University of Idaho on this lively, informative tour of our attractive campus. A student guide will show you our outstanding facilities and explain unique features of our community.

Power Lab Tour (1:00)

Thyristor Controlled Series Capacitor

Join Brandon Enevold, Mark Lippincott, Michael Hocklander as they demonstrate their senior design project in the new power system protection laboratory made possible by equipment donations from Idaho Power Company and Schweitzer Engineering Laboratories.

Dynamometer Dedication (2:30)

Come see our new chassis dynamometer that is used for vehicle testing. You will be bussed over to the Martin Laboratory for a demonstration.

College of Engineering Tour (3:00)

Have a close up look at the laboratories, research equipment, and facilities that support the innovative activities of the College of Engineering. One of our Engineering Ambassadors will serve as your guide and will give you insights about pursuing an engineering major.

Power Lab Tour (4:00)

Fault Generator for Transient

Network Analysis

Join Ken Hollinger, Jon Leman, and Dan Gordon as they demonstrate their senior design project in the new power system protection laboratory made possible by equipment donations from Idaho Power Company and Schweitzer Engineering Laboratories.

***All tours begin at the Expo 2001 registration table on the first floor of the SUB.**

With over 25 years of experience, Engineering Outreach provides complete off-campus graduate degrees in eleven disciplines. Coursework for personal and professional advancement, short courses, and certificates of completion are also available at a distance. Courses are delivered using a variety of technologies including the internet, videotape, CD, and print material.

EO Engineering Outreach
www.uidaho.edu/evo



Design Expo Awards

Awards will be presented to the exhibits, posters, and technical session that address selected criteria that are important in engineering accreditation. Exhibits will be judged based on interviews with team members. Specific criteria include thoughtful use of design methodology, knowledge of appropriate engineering standards & constraints, awareness of potential project impact on society, and development of life-long learning skills in the course of the project. Posters and technical sessions will be judged on the ability to communicate concepts to a technical audience. Specific criteria include clear statement of purpose, organization of supporting content, appropriate style/format of presentation, and use of visual aids.

One People's Choice Award will be presented. This award is based on votes cast by all Expo registrants (including exhibitors) and has no specific criteria.

Exhibit Awards

Booth Awards

Gold Award	\$200
Silver Award	\$100

Poster Awards

Gold Award	\$200
Silver Award	\$100

Technical Session Awards

Gold Award	\$200
Silver Award	\$100

People's Choice Award	\$100
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SCHWEITZER ENGINEERING LABORATORIES

Making Electric Power Safer, More Reliable, and More Economical
An Employee Owned Company



Booth Exhibits

2001 Concrete Canoe-AURVANDIL

Exhibitors: Ryan Sherman, Kipp Richter, Eric Walton, Christina Ryan
Sponsor: CE Department
UI Advisor: Edwin Schmeckpeper

2001 University of Idaho Formula SAE

Exhibitors: John Ma, Bob Drew, Marc Odell, Zach Doerzaph
Sponsor: ME Department
UI Advisor: Tony Anderson

3 Axis Laser Etching Station

Exhibitors: Seth Millhorn, Marc Odell, Mike Dingledein
Sponsor: Stryker Endoscopy
UI Advisors: Steve Beyerlein, Edwin Odom

Accelerometers as Inertial Navigators

Exhibitors: Joe Frankel, John Colwell
Sponsor: ME Department
UI Advisor: Michael Anderson

Agricultural Pesticide Use with Regards to Ground Water Contamination

Exhibitor: Brady Christensen
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

AISC Steel Bridges

Exhibitor: Sean Lecoultre
Sponsor: CE Department
UI Advisor: Ed Schmeckpeper

AJAX Telemetry System

Exhibitors: Chad Orbe, Nick Davis, Juan Diego Deaton, Eric Chin
Sponsor: COMER
UI Advisor: Richard Wall

ASME

Exhibitor: Allen Mikles
Sponsor: ME Department
UI Advisor: Ron Smelser

Automated Device for Variability Studies of a Test Apparatus

Exhibitors: Gabe Putnam, Mark Sullivan, Kevin Organ, Jeremy Staab
Sponsor: Intel
UI Advisors: Edwin Odom, Steve Beyerlein

Automated Encoder Disc Cutting

Exhibitors: Erik Flodin, Don Pratt, Zach Beeler
Sponsor: Encoder Products
UI Advisors: Steve Beyerlein, Edwin Odom

Bio-plex

Exhibitors: Cody Miller, Dan Gordan
Sponsor: ECE Department
UI Advisor: Boris Boracio

Blanking Locator Device

Exhibitors: Michael Klein, Jennifer Bell, Trevor Bingham
Sponsor: Boeing Company
UI Advisors: Edwin Odom, Steve Beyerlein

Blow Molding Machine

Exhibitors: Heber Lemmon, Oren Edwards, Matt Walker
Sponsor: Stryker Endoscopy
UI Advisors: Edwin Odom, Steve Beyerlein

CAN Based Control of an Agricultural Sprayer

Exhibitors: Erik Drews, Borris Braccio
Sponsor: BAE Department

Clean Vehicle Fueling Station

Exhibitors: Rex Aman, Zach Choate
Sponsor: Automotive Resources, Inc.
UI Advisors: Steve Beyerlein, Edwin Odom

CMP Flow Visualization Project

Exhibitors: Nathan Swain, Tim Milot, David Robinson
Sponsor: Micron Technology
UI Advisors: Steve Beyerlein, Edwin Odom

Commercial Turf Controller (C-TIC)

Exhibitors: Colby Hansen, Dan Rebeck, Mark Ingram
Sponsor: ECE Department
UI Advisor: Richard Wall



Core Bore Extractor

Exhibitors: Mandi Clarke, Carey Matthews,
Shad Quirl

Sponsor: Argonne National Lab - West

UI Advisors: Steve Beyerlein, Edwin Odom

Design a Product!

Exhibitors: Donald Elger

Sponsor: ME Department

Design of US 95 at South Entrance of Moscow

Exhibitors: Christina Ryan, Craig Dierlin, Dustin

Clarence Forsmann, Gary Place

Sponsor: CE Department

UI Advisor: Fouad M. Bayomy

Electric Camaro and Future Truck (Hybrid Electric Suburban)

Exhibitors: Advanced Vehicle Concepts Team

Sponsor: GM and DOE

UI Advisors: Don Blackketter, Steve Beyerlein

Endoscope Cleaning System

Exhibitors: Ann Marie Hardin

Sponsor: Moscow Family Medical

UI Advisor: David Drown

Excellence in Graduate Leadership, Mentoring, and Design

Exhibitors: Idaho Engineering Works

Sponsor: ME Department

UI Advisor: Edwin Odom

Fault Generator for Transient Network Analyzer (see Tours)

Exhibitors: Ken Hollinger, Jon Leman, Dan Gordon

Sponsor: ECE Department

UI Advisor: Richard Wall

Heat Sink CPU Assembly Jig and Fan Tester

Exhibitors: Jacob Wages, Shawn Kimbley, Tom Monter

Sponsor: Jabil Circuit, Inc.

UI Advisors: Steve Beyerlein, Edwin Odom

Hummer: A Cooperative, Collaborative Intrusion Detection System

Exhibitors: David Betts, Steven Haler, Roy Tromble,
Nate Roseblum

Sponsor: CS Department

UI Advisor: Deborah Frincke

HumV: The Hummer Visualization Project

Exhibitors: Marshall Stokes, Sinae Kim, Roy Tromble,
Liz Wilhite

Sponsor: CS Department

UI Advisor: Deborah Frincke

Hydraulic Design

Exhibitors: Chris Kowalski, Amy Schroeder

Sponsor: CE Department

UI Advisor: John Finnie

Ingot Extraction From a Crucible

Exhibitors: Jared Foster, Greg Morrison, Andy Cluff

Sponsor: Argonne National Lab - West

UI Advisors: Edwin Odom, Steve Beyerlein

Lockwire Cut-To-Length Workstation

Exhibitors: Christopher Glancey, Jon Belden, Travis
O'Briant

Sponsor: Harpers

UI Advisors: Edwin Odom, Steve Beyerlein

Magpies: Intelligent Agents For Security

Exhibitors: Keith Wallace, Jared Miller, Stephen Tratz,

Pranesh Narayanaswami

Sponsor: CS Department

UI Advisor: Deborah Frincke

ME 262 Stirling Engine

Exhibitor: ME 262 Class

Sponsor: ME Department

UI Advisor: Edwin Odom

ME 324 Kinematic Design of Machines

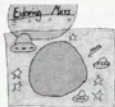
Exhibitor: ME 324 Class

Sponsor: ME Department

UI Advisor: Don Blackketter

Continued on page 14

DESIGN EXPO 2001 SCHEDULE OF EVENTS

	BALLROOM	REGISTRATION DESK	BORAH THEATER	SILVER ROOM
8:00	Opening Ceremonies 8:00-8:15			
8:30				
9:00				Materials & Metallurgical
9:30		Campus Tour 9:30-10:30	Keynote - Henry Petroski 9:30-10:30	Engineering Presentations
10:00	Computer Science Posters 10:00-11:30			9:00-11:30
10:30				
11:00			Plenary - Guion Bluford 11:00-12:00	
11:30	Mechanical Engineering/ Biological & Agricultural Posters 11:30-1:00			
12:00				Expo Guest Luncheon 12:00-1:00
12:30				
1:00		EE Power Lab Tour 1:00-1:30	Plenary - Christy Budenbender 1:00-2:00	
1:30		Campus Tour 1:30-2:30		
2:00	Environmental Science Posters 2:00-3:30			
2:30		Chassis Dyno Tour 2:30-3:30		
3:00	College of Mines Posters 3:00-4:30	College of Engineering Tour 3:00-3:30		
3:30				
4:00		EE Power Lab Tour 4:00-5:00		
4:30				
5:00				
		 Idaho Tech: Mars Rover Challenge Kibbie Dome - All Day		

ROOM	GOLD ROOM	APPALOOSA ROOM	PEND OREILLE ROOM	
				8:00
	Judge Orientation 8:30-9:00			8:30
				9:00
		Biological & Agricultural Engineering Presentation 9:30-10:00		9:30
				10:00
		Chemical Engineering Presentations 10:30-12:30	Civil Engineering Presentations 10:30-12:30	10:30
				11:00
				11:30
Luncheon	Mechanical Engineering Luncheon 12:00-1:00			12:00
				12:30
				1:00
	Golden I Alumni Dessert with the Deans 1:30-2:30			1:30
		Electrical Engineering Presentations 2:00-4:00	Vehicle Project Forum 2:00-3:00	2:00
				2:30
			Careers in Aerospace 3:30-4:30	3:00
	Environmental Science Awards 3:30-4:30			3:30
				4:00
				4:30
				5:00



Continued from page 11

NIATT Controller Interface Device II

Exhibitors: Zhen Li, Jeremiah Remus

Sponsor: ECE Department

UI Advisor: Brian Johnson

NIATT Engine Emission Testing

Exhibitors: John Camin, Robert Drew, Sean Halbert

Sponsor: NIATT

UI Advisors: Judi Steciak, Steve Beyerlein

Radio Controlled Water Sampler

Exhibitors: Stephanie Hallock, Montessa Young

Sponsor: Enz A Bac Wastewater Technology

UI Advisor: Charles Peterson

Re-configurable Smart-Sensor Controller

Exhibitors: Luke Raymond, Joe Casebolt, Ed Coulter

Sponsor: ECE Department

UI Advisor: Richard Wall

Red River Bridge

Exhibitors: Greg Woods, Chris Kowalski, Cameron

Hipwell, Brian Ross, Nathan Cuvala

Sponsor: CE Department

UI Advisor: Richard Nielsen

**Residue Manipulation System for Direct-Seeding
Drills to Improve Seed Pene Performance**

Exhibitor: Saleh Alkraid

Sponsor: STEEP

UI Advisor: Erik Drews

SAE Clean Snowmobile Challenge

Exhibitor: UI Clean Snowmobile Team

Sponsor: ME Department

UI Advisor: Karen DenBraven

Save the Citizens!

Exhibitor: ME 223 Class

Sponsor: ME Department

UI Advisor: Steven Beyerlein

Sewer Service Line Plug

Exhibitors: Quincy O'Donnell, Mark Paulus, Zach
Doerzaph, Chris Reeder

Sponsor: City of Boise

UI Advisors: Steve Beyerlein, Edwin Odom

Sharver Lateral

Exhibitor: Rahim Abassi

Sponsor: City of Boise

UI Advisor: John Finnie

Shoulder Saver

Exhibitors: Melissa Hallock, Don Hancock, Charles Kinney

Sponsor: Dr. Jim Swain

UI Advisors: Steve Beyerlein, Edwin Odom

Small Generator Performance Analysis

Exhibitors: Matt Walker, Tom Monter

Sponsor: NIATT

UI Advisor: Mike Anderson

Small Transfer Lock

Exhibitors: Brad Kempton, Brandon Van Slyke, Kevin
Hubert

Sponsor: Argonne National Lab - West

UI Advisors: Edwin Odom, Steve Beyerlein

Sprinkler Distribution Test Stand

Exhibitors: Adam Forsmann, David Hollenback, Mark
Eberhard, Cordell Kress

Sponsor: Nelson Irrigation

UI Advisor: Charles Peterson

Thyristor Controlled Series Capacitor (see Tours)

Exhibitors: Brandon Enevold, Mark Lippincott,

Michael Hocklander

Sponsor: ECE Department

UI Advisor: Richard Wall

Titanium Aluminide Nozzles

Exhibitors: Chris Seaward, Jake Jakisari, Barry Aimes,
Dan Darlington

Sponsor: Materials & Metallurgical Engineering

UI Advisor: Keith Prisbey

**Ultrasonic Detection of Stress Residuals in
Thin Film Coatings**

Exhibitors: Brad Kempton, Andy Cluff

Sponsor: ME Department

Web Application for Customer Database

Exhibitor: Stephanie Myers

Sponsor: Internet Systems Solutions

UI Advisor: Karen Van Houten

Poster Exhibits

College of Mines

Development of Low Density Ternary Ti Alloys via Mechanical Alloying

Exhibitor: Mohsin Mohammed Qureshi,
James Richard
Sponsor: IMAP
UI Advisor: Sam Froes

Magnetic Interaction in Spherical Barium Ferrite Recording Media

Exhibitor: M.H. Park
Sponsor: Materials and Metallurgical Engineering
UI Advisor: Yang Ki Hong

Nucleation Mechanism of Electrodeposited Copper Thin Films

Exhibitor: Darko Grujicic
Sponsor: Materials and Metallurgical Engineering

Oxide Dispersion Strengthening of Titanium Aluminides for High Temperature Application

Exhibitor: Pankaj B. Trivedi
Sponsor: IMAP
UI Advisor: Sam Froes

Phase Transformations in Ti-6Al-4V, Ti-6Al-2Sn-4Zr-2Mo, Hydrogen System

Exhibitor: Jawad Rahim
Sponsor: IMAP
UI Advisor: Sam Froes

Plasma Nitriding Tool Steels

Exhibitor: Dan Darlington
Sponsor: Materials & Metallurgical Engineering
UI Advisor: Keith Prisbey

Residual Energy Strain in Rock-A Key to Energy Savings

Exhibitor: Vamshi Venapally
Sponsor: Materials and Metallurgical Engineering

Retaining Wall Design

Exhibitors: Andy Abrams, Robert Barker
UI Advisor: Stanley Miller

Synthesis and Magnetic Properties of Lithium-Zinc Spinel Ferrite

Exhibitor: Sung Hoon Gee
Sponsor: Materials and Metallurgical Engineering

Synthesis of Nano structured Ti-6Al-4V Powder by Mechanochemical Processing

Exhibitor: Muhammad Daniel Saeed
Sponsor: Materials and Metallurgical Engineering

Thickness Dependence of Metallic Thin Film Adhesion

Exhibitor: Matthew Mottern
Sponsor: INEEL
UI Advisor: Yang Ki Hong

The logo for Micron, featuring a stylized 'M' with a swoosh and the word 'Micron' in a bold, sans-serif font.

A Genetic Algorithm For Expert System Rule Generation

Exhibitor: John Determan
Sponsor: Bechtel BWXT Idaho
UI Advisor: James Foster

A Statistical Technique for Detecting Network Intrusions

Exhibitor: Carol Taylor
Sponsor: CS Department
UI Advisor: Jim Alves-Foss

Active Password Checker

Exhibitor: Ryan Cone
Sponsor: CS Department
UI Advisor: Deborah Frincke

API Documentation Tool

Exhibitors: Wade Dorrell, Ryan Cone, Mike Conover, Sam Kirchmeier
Sponsor: Hewlett-Packard
UI Advisor: Bill Junk

Automated Grades

Exhibitor: Jon McFarling
Sponsor: CS Department
UI Advisor: Karen Van Houten

Automated Network for Cluster Computers

Exhibitor: Andrew Shewmaker
Sponsor: CS Department
UI Advisor: Dr. Scott Harrison

Bug Hunter 2000

Exhibitor: Josh Zimmerman
Sponsor: Knosys inc.
UI Advisor: Karen Van Houten

Classification of Network Attacks

Exhibitor: Jennifer Jackson
Sponsor: Center for Secure and Dependable Software
UI Advisor: Deborah Frincke

Dataforce Sports Web Improvements

Exhibitor: Lance Forsburg
Sponsor: DataforceSports.com
UI Advisor: Karen Van Houten

FunctionMaker

Exhibitors: Chris Holmes, Scott, Witschen, Keith Felt
Sponsor: CS Department
UI Advisor: Bill Junk

Game Play a Play by Mail to Electronic Evolution

Exhibitor: Marc J. Laude
Sponsor: CS Department
UI Advisor: Karen Van Houten

Genetic Programming, Complexity, and Implications

Exhibitor: Bart Rylander
Sponsor: CS Department
UI Advisor: James Foster

Graph Idea Network

Exhibitors: Kexiao Liao, Jon McFarling, Andrew Shewmaker, Jeff Bredeson
Sponsor: CS Department
UI Advisor: Bill Junk

Investigator's Advisory Tool

Exhibitors: Phillip Matheson, Chad Baker
Sponsor: CS Department
UI Advisor: Bill Junk

IRS-Incident Report System

Exhibitor: Justin Mack
Sponsor: CS Department
UI Advisor: Karen Van Houten

Mobile Investigatory Tools

Exhibitor: Jared Miller
Sponsor: CS Department
UI Advisor: Deborah Frincke

**Movie Checkout System**

Exhibitor: Peter Wang

Sponsor: Safari Pearl Comics

UI Advisor: Scott Harrison

NT Account Creation Too

Exhibitor: Sam Kirchmeier

Sponsor: CS Department

UI Advisor: Scott Harrison

NT Event Logs

Exhibitor: Edward Wong

Sponsor: CS Department

UI Advisor: Scott Harrison

NT Event Logs, Phase Two:**Data Collection Tool**

Exhibitor: Rick Hensley

Sponsor: CS Department

UI Advisor: Karen Van Houten

Policy Tool for the Hummer Security System

Exhibitor: Robert Bieze

Sponsor: CS Department

UI Advisor: Karen Van Houten

Polya Study Group Organizer

Exhibitor: Patrick O'Connell

Sponsor: UI Polya Center

UI Advisor: Karen Van Houten

RELY

Exhibitor: Daniel Conte de Leon

Sponsor: CS Department

UI Advisor: Jim Alves-Foss

SANEPa

Exhibitor: Heather Purington

Sponsor: Intel Corporation

UI Advisor: Karen Van Houten

SeaBASS

Exhibitors: Kristin Provant, Casy Gepford, Corey Stone, Jonathan Fox

Sponsor: CS Department

UI Advisor: Bill Junk

SNIF Surveying Network Information Flow

Exhibitor: Bruce Scallorn

Sponsor: CS Department

UI Advisor: Karen Van Houten

Snort Tool

Exhibitor: Roy Tromble

Sponsor: CS Department

UI Advisor: Karen Van Houten

SRO Database with Web Front End

Exhibitor: Corey Arnold

Sponsor: UI Bookstore

UI Advisor: Karen Van Houten

Statistical Intrusion Detection

Exhibitor: Carol Taylor

Sponsor: CS Department

UI Advisor: Jim Alves-Foss

Take Off and Proposal Program

Exhibitor: Matt Kaylor

Sponsor: Rusty's Electric

UI Advisor: Karen Van Houten

Test Case Management Tool

Exhibitor: Robert Beasley, James Burkharl, Karl Riley

Sponsor: Hewlett Packard

UI Advisor: Bill Junk

The Controlling and Modeling a CAN field bus with a PC

Exhibitor: Li-Phing Pung

Sponsor: ECE Department

UI Advisor: Karen Van Houten

The Linux Instrumentation Tool

Exhibitors: Jason Hansen, Matthew Hillebrand, Eric

Upson, Kurt Williams

Sponsor: CS Department

UI Advisor: Bill Junk

UI XML System

Exhibitor: Kurt Williams

Sponsor: CS Department

UI Advisor: Scott Harrison



Web Timesheets

Exhibitor: Wade Dorrell

Sponsor: CS Department

UI Advisor: Scott Harrison

Xregis

Exhibitor: Matthew Hillebrand

Sponsor: CS Department

UI Advisor: Scott Harrison

Environmental Science

An Analysis of Arsenic Contamination in Private Wells of Canyon country, ID

Exhibitor: Aaron S. Torres

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

An Analysis of the Environmental Education Programs of the Clearwater Valley and Elk City Schools

Exhibitor: Jarod Blades

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Assessment of Re-Use and Ultimate Fate of PET (polyethylene terephthalate) Water Bottles

Exhibitor: Kathryn Dallas

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Categorical Analysis Prioritizing the 33 targeted Nitrate Areas of concern in the State of Idaho

Exhibitor: Jacob Vowels

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Cave Bay Water Supply

Exhibitor: Sarah Scott

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Cave Bay Watershed Analysis

Exhibitor: Chris Milewski

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Comparative Study on the Missouri River and Snake River

Exhibitor: Jennifer Hafner

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Comparison of Composted Material and Compost Machines

Exhibitor: Eric Salontai

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Compilation of Well Logs to Evaluate the Electrical Conductivity of Open and Clay Filled Fractures

Exhibitor: John Rainey

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Composting Technology as an Approach to Eliminate Pathogenic E. coli

Exhibitor: Edmund Wong

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Conflict and Collaboration: A North Idaho Perspective

Exhibitor: Cheryl Vincent

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Cutthroat Habitat Resoration Plan For a Small Mountain Stream: East Fork of Small Creek

Exhibitor: Beau Crawford

UI Advisor: Margrit Von Braun

Eco Dorm Interest Analysis

Exhibitor: Denise Ronneburg

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Enhanced Training in Idaho EIS's with regard to military bombing ranges; public input and opinion process

Exhibitor: Christopher M. Crisler, Thomas Jacob
Sponsor: Environmental Science
UI Advisor: Keith Russell

Environmental Justice Case Study: The Skull Valley Goshutes

Exhibitor: Nicole Jackson
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Evaluation of Water Flow and Levels in Moscow Wells

Exhibitor: Robin M. Dunn
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Expanding the Public Trust Doctrine

Exhibitor: Jenna Gorman
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Hybrid Abies Concolor, Abies Grandid Project

Exhibitor: Jenah Thornborrow
Sponsor: Environmental Science
UI Advisor: Steve Brunsfield

Hydrogen Fuel Cells: Alternative Energy Source For Targhee Hall

Exhibitor: Andrew J Brown
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Land Trades in the Northwest

Exhibitor: Jessie Shawver
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Lunar and Satellite Based Power Source as a viable alternative energy source

Exhibitor: Travis Powell
Sponsor: Environmental Science
UI Advisor: Keith Prisbrey

Lunar Solar Power System

Exhibitor: Max Geidl
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Nitrate-Nitrogen Assessment of the Cow Creek Area of Concern

Exhibitor: Clayton Steele
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Pollutant Transport Model of the Upper-Missouri Watershed, MT

Exhibitor: Ryan McCluskey
Sponsor: Environmental Science
UI Advisor: Keith Prisbrey

Pre-Teacher Survey of the Effectiveness of the GLOBE Program

Exhibitor: Dara Lee
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Raingage Accuracy

Exhibitor: Angie Koski
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Source Tracking and Mapping of Fecal Coliform Pollution in a Multiple Use Watershed

Exhibitor: Jennifer Rooker
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

Standard Condition Radical Free Oxidation of Nitrobenzene, a Surrogate for 2,4,6-Trinitrotoluene

Exhibitor: Matt McLaughlin
Sponsor: Environmental Science
UI Advisor: Margrit Von Braun

The Effect of Study Area Size on the Accuracy Vegetation Classification Derived From Remotely Sensed Data

Exhibitor: Matthew Price

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

The Impact on Hunting of Sage Grouse (Centrocercus urophasianus)

Exhibitor: Kyle Bradley Olree

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

The Skull Valley Goshutes and the Mescalero Apaches

Exhibitor: Holly Cunha

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

TNT Degradation using a Soil Consortium and a Pure Culture of Clostridia

Exhibitor: Jeong yeon Park

Sponsor: Environmental Science

UI Advisor: Ron L Crawford

Using Geological Storativity for Water Generation in Southeast Idaho

Exhibitor: Troy Preuit

Sponsor: Environmental Science

UI Advisor: Margrit Von Braun

Water Level Declines in the Moscow/Pullman Basin: The City of Pullman

Exhibitor: Zachary J Garcia

Sponsor: Environmental Science

UI Advisor: James Osiensky

Biological & Agricultural Engineering

Assessment of Phosphorus Dynamics from Irrigated Pasture Land

Presenter: Morella Sanchez

Sponsor: BAE Department

Advisor: Jan Boll

Mechanical Engineering

Determination of Modulus of Elasticity by an Acoustic Method

Exhibitors: Don Hancock, Jennifer Bell

Sponsor: ME Department

UI Advisor: Ron Smelser

Formula SAE Engine Testing

Exhibitors: Robert Drew, Marcus Odell

Sponsor: ME Department

UI Advisor: Mike Anderson

Formula SAE Tire Testing

Exhibitors: John Ma, Tim Milot

Sponsor: ME Department

UI Advisor: Mike Anderson

Measurement of Parachute Drag

Exhibitors: Bill Dalling, Jermy Staab

Sponsor: ME Department

UI Advisor: Mike Anderson

Measurement of Thiele/Small Parameters

Exhibitors: Brandon V. Slyke, Shad Quirl

Sponsor: ME Department

UI Advisor: Mike Anderson

Removal of Water Soluble Elements from Straw

Exhibitors: Kenneth Benjamin, Mandi Clarke

Sponsor: ME Department

UI Advisor: Mike Anderson

Ultrasonic Paper Testing

Exhibitors: Sean Halbert, Heber Lemmon

Sponsor: ME Department

UI Advisor: Mike Anderson

Wind Effect on the ME223 Kit Rocket

Exhibitors: Erik Flodin, Sean Gray, Kevin Hubert

Sponsor: ME Department

UI Advisor: Mike Anderson

Technical Sessions

Materials & Metallurgical Engineering Presentations

Silver Room 9:00-11:30

Session Chair: Alan Place

9:00

Nucleation Mechanism of Electrodeposited Copper Thin Film

Presenter: Darko Grujicic

Sponsor: Materials & Metallurgical Engineering

Advisor: Y.K. Hong

9:30

Oxide Dispersion Strengthening of Titanium Aluminides for High Temperature Applications

Presenter: Pankaj B. Trivedi

Sponsor: Materials & Metallurgical Engineering

Advisor: Y.K. Hong

10:00

Phase Transformations in Ti-6Al-4V Hydrogen System

Presenter: Jawad Rahim

Sponsor: IMAP

Advisor: Sam Froes

10:30

Synthesis of Nano-structured Ti-6Ti-4V Powder by Mechanochemical Processing

Presenter: Muhammad D. Saeed

Sponsor: Materials & Metallurgical Engineering

Advisor: Y.K. Hong

11:00

Production and Characterization of Fully Dense Hydrogenated Gamma TiAl by Blended Elemental Approach

Presenter: Javaid I. Qazi

Sponsor: IMAP

Advisor: Sam Froes

Biological & Agricultural Engineering Presentation

Appaloosa Room 9:30-10:00

Session Chair: Jan Boll

9:30

Assessment of Phosphorus Dynamics from Irrigated Pasture Land

Presenter: Morella Sanchez

Sponsor: BAE Department

Advisor: Jan Boll

Chemical Engineering Presentations

Appaloosa Room 10:30-12:15

Session Chair: David Drown

10:30

Lysine Synthesis From Potato Waste

Presenters: Jason Morgan, David Juhasz, Bill Mager

Sponsor: Lamb Weston

Advisor: David Drown

10:55

Process Upgrade for the City of Emmett Wastewater Treatment Plant

Presenters: Travis Beck, Demian Guthmiller, Jon Bjorkman

Sponsor: City of Emmett

Advisor: David Drown

11:20

Alternative Fiber Sources for Pulp & Paper

Presenters: Jeremy Frei, Gary Vance, Scott Flynn, Yun Shi

Sponsor: CHE Department

Advisor: David Drown

11:45

Endoscope Cleaning System

Presenter: Ann Harie Hardin

Sponsor: Moscow Family Medicine

Advisor: David Drown



Electrical Engineering Presentations

Appaloosa Room 2:00-4:00 PM

Session Chair - Richard Wall

2:00

AJAX Rocket Telemetry System

Presenters: Juan Deaton, Nick Davis, Chad Orbe,
Eric Chin

Sponsor: Metallurgical Engineering

Advisors: Brigham Young, Richard Wall

2:30

Re-Configurable Smart-Sensor Controller

Presenters: Luke Raymond, Joe Casebolt, Ed Coulter

Sponsor: ECE Department

Advisors: Jim Frenzel, Richard Wall

3:00

Commercial Turf Irrigation Controller

Presenters: Colby Hansen, Dan Rebeck, Mark Ingram

Sponsor: BAE Department

Advisor: Richard Wall

3:30

Gaussian White-Noise Generator for Testing

Forward Error Correcting Turbo Product Codes

Presenters: Tony Summers, Aaron Zenner, Paul
Langworthy

Sponsor: Advanced Hardware Architecture

Advisor: Richard Wall

Vehicle Project Presentations

Pend Oreille Room 2:00-3:00

Session Chair - Dan Gerbus

2:00

Future Truck 2001 - Hybrid Electric Suburban

Presenters: Scott Anderson, Doug Welling

Sponsor: NIATT

Advisors: Don Blackketter, Steve Beyerlein

2:30

2001 SAE Formula I Vehicle

Presenters: John Ma, Zach Doerzaph, Marc Odell,
Bob Drew

Sponsor: ME Department

Advisor: Tony Anderson

Awards Banquet Program University Inn Best Western — Convention Center

6:00 pm

Social

7:00 pm

Dinner

8:00 pm

Awards

- Special Recognitions • Exhibit Awards • Poster Awards
- Technical Session Awards • People's Choice Award



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