

2007 SPRING ENGINEERING FESTIVAL - MONTANA STATE UNIVERSITY

Name _____ Position _____

Company/Agency _____

Address _____

City _____ State _____ ZIP Code _____

Office Phone _____ Email _____

(To Help Us, Please Check Which Items You Plan on Attending)

Thursday, March 1st, 2007

Friday, March 2nd, 2007

Technical Sessions 1 & 2 (3.5 PDH)

- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

Professional Society Meetings

- ASCE
- ITE
- SEAMT

Early Bird Registration (Received on or before 2/16/07)

On-site Registration (Received after 2/16/07)

Technical Sessions 3 & 4 (3.5 PDH)

- Structural Engineering
- Geotechnical Engineering
- Transportation Engineering
- Water Resources Engineering

- Luncheon (2 PDH) – Beartooth Highway
Emergency Repair Project

Student Interviews¹

- For temporary hires
- For permanent hires
- For both

\$175 per person \$ _____

\$200 per person \$ _____

TOTAL \$ _____

REGISTRATION FEES

Pre-registration is encouraged. Registration includes admission to all Technical Sessions, and the Luncheon Program (including lunch). Early Bird registrants will receive a festival information packet by mail and a single university parking pass. On-site registrants must secure their own university parking pass and will receive their festival information packet at the registration desk. University parking passes are available for \$2.50 per day from the MSU Police Station at 7th and Kagy and at the Visitor Parking Lot (Lot C) Kiosk at 7th and Grant.

QUESTIONS

For general Spring Festival information, contact Dan VanLuchene at (406) 994-6123 or danv@ce.montana.edu.

To schedule student interview facilities, contact Sharon Falkenstein at (406) 994-5485.

¹ Contact Sharon Falkenstein to reserve

Please make checks payable to **ASCE Conference Account** and return registration fees and forms to:

**Dan VanLuchene – Spring Festival
Civil Engineering
205 Cobleigh Hall
Montana State University
Bozeman, MT 59717**

Department of Civil Engineering
Montana State University

SPRING ENGINEERING FESTIVAL

March 1st and 2nd, 2007



- Attend technical presentations in the areas of Geotechnical, Structural, Transportation, and Water Resources Engineering and earn up to 9 PDH of Continuing Education Credit
- Network with your peers at Professional Society Meetings
- Interact with students both formally at student interviews through MSU career services, and informally at technical sessions and luncheon
- Hear about the Beartooth Highway Reconstruction during 2005

PROGRAM AT A GLANCE

Thursday, March 1st, 2007

12:00 PM	Check-in, on-site registration Student Union Building (SUB) 275			Student Interviews for Temporary or Permanent Employment
1:00 PM	Technical Session 1			
2:00 PM	Structural Engineering	Water Resources Engineering	Transportation Engineering	
3:00 PM	Technical Session 2			
4:00 PM	Structural Engineering (Continued)	Water Resources Engineering (Continued)	Transportation Engineering (Continued)	
5:00 PM 5:30 PM	ITE		SEAMT	
7:00 PM	ASCE			

Friday, March 2nd, 2007

7:30 PM	Check-in, on-site registration, SUB 275				Student Interviews for Temporary or Permanent Employment
8:00 PM	Technical Session 3				
9:00 PM	Structural Engineering (Continued)	Water Resources Engineering	Transportation Engineering	Geotechnical Engineering	
10:00 PM	Technical Session 4				
11:00 PM	Structural Engineering (Continued)	Water Resources Engineering (continued)	Transportation Engineering	Geotechnical Engineering (continued)	
12:00 PM (Ending at 2:00PM)	Luncheon – Beartooth Highway Emergency Repair Project Presented by: John Shoff, Teri Swenson, Jordan Grover, and Stefan Streeter				

REGISTRATION INFORMATION

Registration Fees

Registration includes admission to all Technical Sessions and the Luncheon Program (including lunch).

Early Bird Registration	Before February 16th, 2007	\$175.00
On-site Registration	After February 16^h, 2007	\$200.00

Early Bird registrants will receive a festival information packet by mail and a single university parking pass. On-site registrants must secure their own university parking pass and will receive their festival information packet at the registration desk.

University parking passes are available for \$2.50 per day from the MSU Police Station at the corner of 7th and Kagy and at the Visitor Parking Lot (Lot C) Kiosk at the corner of 7th and Grant.

Area Accommodations

7th Avenue (Exit 306 off I-90)

Best Value Inn	(406) 585-7888	817 Wheat Dr.
Bozeman Inn	(800) 648-7515/(406) 587-3176	1235 N. 7 th Ave.
Comfort Inn	(800) 587-3833/(406) 587-2322	1370 N. 7 th Ave.
Holiday Inn	(406) 587-4561	5 Baxter Lane
Microtel Inn & Suites	(800) 597-3797/(406) 586-3797	612 Nikles Dr.
Ramada Limited	(406) 585-2626	2020 Wheat Dr.
Super 8	(800) 800-8000/(406) 586-1521	800 Wheat Dr.
TLC Inn	(877) 466-7852/(406) 587-2100	805 Wheat Dr.

19th Avenue (Exit 305 off I-90)

Wingate Inn	(866) 910-4995/(406) 582-4995	2305 Catron St.
Hilton Garden Inn	(877) 452-9444/(406) 582-9900	2023 Commerce

Downtown

Best Western City Ctr.	(800) 528-1234/(406) 587-3158	507 W. Main St.
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Contacts

For general Spring Festival information

Dan VanLuchene	(406) 994-6123
Department of Civil Engineering, MSU	danv@ce.montana.edu

To schedule student interview facilities

Sharon Falkenstein, Career Services, MSU	(406) 994-5485
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LUNCHEON PROGRAM (12-2PM)

Beartooth Highway Emergency Repair Project

The Beartooth Highway Emergency Repair Project was one of the highest profile public works projects ever in Montana. The catastrophic failure in May 2005 and subsequent repair garnered national attention from New York to Los Angeles. The successful project incorporated innovative contracting methods, design solutions, and construction methods. The project restored the economic lifeline of Red Lodge and Cooke City and was completed ahead of the aggressive schedule and under budget. The successful project received numerous local, state, and national awards recognizing excellence and innovation in the areas of engineering, management, and construction.

The PowerPoint presentation includes hundreds of photographs and other information demonstrating the magnitude of the failure and the innovative engineering solutions that were developed under severe time constraints and constructed under extreme conditions.

About the Presenters:

John A. Shoff, P.E. – Design Project Manager with HKM Engineering. BS CE MSU 1981.

Teri L. Swenson, P.E. – Project Engineer with HKM Engineering. BS CE MSU 1995.

Jordan L. Grover, P.E. – Geotechnical Engineer with HKM Engineering. BS CE MSU 1999, MS CE MSU 2001.

Stefan Streeter, P.E. – Billings District Construction Engineer – Montana Department of Transportation.

GEOTECHNICAL ENGINEERING

4-hour Session

Geosynthetic Basics

David J. Elton, Ph.D., P.E., Associate Professor of Civil Engineering, Auburn University, Alabama

Geosynthetic Basics introduces attendees to the use, selection, and installation of geosynthetic products in many basic areas of application, especially for unfavorable site conditions. The course is formulated for engineering and construction professionals on the use of these time- and cost-saving products. The knowledge base presented in this course will assist designers charged with specifying these products, or construction inspectors who must ensure their proper installation. The course will provide a fast-paced review of the uses and testing of geosynthetics in Civil Engineering applications.

About the Presenter:

Dr. Elton has been active in geosynthetics for more than a decade, having organized the NSF/FAI Professor Training Course for Geosynthetics, taught university and short courses, edited the IGS News for five years, and developed geosynthetic teaching notes for distribution. Dr. Elton has served on the ASCE and TRB geosynthetics committees, and was a member of the North American Geosynthetics Society Board of Directors, and is currently the President of NAGS.

Dr. Elton is a professional civil engineer and educator with degrees from Clarkson College of Technology, Utah State University, and Purdue University. His honors include a U.S. patent, the Fred Burggraf Award of the Transportation Research Board, the inaugural Distinguished Educator award from US Universities' Council on Geotechnical Engineering Research and the IGS Service Award.

Technical Sessions 1 - 4

STRUCTURAL ENGINEERING

7-hour Session

Seismic Braced Frames Design Concepts and Connections

Rafael Sabelh, S.E., Principal, DASSE Design, San Francisco, California

The course will focus on the design requirements in the AISC Seismic Provisions for Structural Steel Buildings. For those of you that are proficient with the 2002 AISC Seismic Provisions, the seminar will highlight the differences between the 2002 and 2005 editions, and the implications of these changes in your design.

Why Attend?

- Understand the expected behavior of each of the braced frame systems under seismic loading.
- Learn, in detail, the member and connection design requirements for each of the braced frame systems.
- Review design examples of both braced frame member and connection design.
- Leave the seminar with the knowledge, tools and confidence to design seismic braced frames correctly.

What's Included?

- Special Concentrically Braced Frames (SCBF)
- Ordinary Concentrically Braced Frames (OCBF)
- Buckling-Restrained Braced Frames (BRBF)
- Clear and concise bound course notes
- Example problems and solutions for each type of the three braced frames.

About the Presenter:

Rafael Sabelh, S.E., is a Principal at DASSE Design in San Francisco, CA. He is a member of the AISC Task Committee on the Seismic Provisions for Structural Steel Buildings, and is the author of numerous publications on concentrically braced frames, including analytical studies and design guides on buckling-restrained braced frames. Rafael is the co-author of AISC Design Guide 20: Steel Plate Shear Walls. He was the 2000 NEHRP Professional Fellow in Earthquake Hazard Reduction, and is the past Chair of the Seismology Committee of the Structural Engineers Association of California.

Technical Session 3
STRUCTURAL ENGINEERING

1-hour Session

2007 Update: Revised Ground Snow Loads for Structural Design in Montana

Jerry Stephens, P.E., Department of Civil Engineering, Montana State University, Bozeman, Montana

This presentation will describe the work done in the most recent revision of the document "Snow Loads for Structural Design in Montana". The presentation will cover:

- The basic analyses used to determine revised 50 year mean recurrence interval ground snow loads at specific stations around the state.
- How the results of these analyses should be used and interpreted (notably, the various values in the snow load tables in the report, and the values obtained using the web-based Snow Load Finder).
- Future work to further improve and refine these analyses and the tools used to present the results.

About the Presenter:

Jerry Stephens, P.E., Ph.D., is a structural engineering professor in the Civil Engineering Department at Montana State University. Dr. Stephens and his colleagues have been working on this update since 2001, and they continue to be involved in efforts to improve it.

Technical Sessions 1 - 2

TRANSPORTATION ENGINEERING

4-hour Session

Context Sensitive Solutions (CSS): The New Gold Standard for Transportation Excellence

Keith Harrison, Safety & Design Engineer, Federal Highway Administration Resource Center, San Francisco, California

This workshop will provide insights into the origins and evolution of CSS and explore how its customer-focused approach can help achieve higher standards of transportation excellence. In addition, the workshop will try to separate fact from fallacy, by addressing common questions and concerns such as these:

- How can I apply a Context Sensitive approach without compromising safety?
- Isn't CSS just a convenient excuse to allow more and more design exceptions?
- CSS is all about appeasing "environmentalists" and other special interest groups.
- We can't afford CSS; Aesthetic walls, bike paths and critter crossings are expensive.
- We're already doing it.

About the Presenter:

Mr. Harrison, a Massachusetts native, holds engineering degrees from Worcester Polytechnic Institute and the Polytechnic Institute of New York. He has more than 25 years of highway engineering experience, all with the Federal Highway Administration (FHWA). Mr. Harrison has worked in FHWA's Resource Center since its inception in 1998, providing training and technical assistance in highway geometric design, roadside safety, and related topics to clients nationwide.

Keith is a self-proclaimed champion for CSS and a member of the TRB Task Force on Context Sensitive Design & Solutions.

Technical Session 3
TRANSPORTATION ENGINEERING

2-hour Session

Planning for Traffic Noise

Cora Helm, Montana Department of Transportation, Helena, Montana

The National Environmental Policy Act (NEPA) mandated the establishment of regulations and standards by federal agencies to assess environmental impacts and to protect the environment. One of many pieces of legislation enacted in the 1970's was the Noise Control Act of 1972 which established a national policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare."

This workshop will give a brief overview of highway traffic noise basics, the problems Montana is facing, a discussion of noise-compatible planning and noise-mitigated developments, and the changes to MDT policy to bring about a cooperative approach to the Montana traffic noise problem.

About the Presenter:

Cora Helm has worked for the Montana Department of Transportation for 13 years in the Environmental Services Bureau, during which time she has been the primary contact for MDT's noise policy and program. She has a Bachelor's degree in geology from Sonoma State University in California and a Master's degree in geology from the University of Montana.

Technical Session 4

TRANSPORTATION ENGINEERING

1-hour Session

ADA in the Public Right-of-Way

Scott Keller, P.E., and Alice Flesch, Montana Department of Transportation, Helena, Montana.

This session will concentrate on the Americans with Disabilities Act (ADA) and its impact in the public right-of-way. Topics will include basic curb ramp designs, truncated dome usage, and the latest debate on the use of new signal designs for the sight impaired. This informational presentation will appeal to designers and field personnel and will provide common sense approaches to meeting both the needs of the users and the often-times misunderstood requirements of the Americans with Disabilities Act.

1-hour Session

Missoula's Malfunction Junction

Brent Campbell, WGM Group, Inc., Missoula, Montana.

The 6-way Brooks/South/Russell intersection in Missoula, MT has been long known as "Malfunction Junction". The intersection caused average vehicle delay of over 2 minutes and was a local "hot spot" exceeding EPA allowances for carbon monoxide pollution. The intersection of three major arterials in Missoula's mid-town area had existed for over 60 years. The City had been studying solutions for 30 years with little agreement on how to solve the problem. Last year the City of Missoula completed construction of a project that allows for vastly improved traffic signal operation and progression.

About the Presenters:

Scott Keller, P.E., and Alice Flesch from the Montana Department of Transportation will provide numerous examples and guidance for both design and construction of ADA facilities in the public domain.

Brent Campbell of WGM Group, Inc. in Missoula was the project manager for the analysis, public involvement and design for the project. He will present an overview of the project and the traffic modeling techniques used in analyzing and optimizing the current configuration. Traffic simulations were a key element in demonstrating to the public that the proposed solution would improve air quality and significantly reduce delay.

WATER RESOURCES ENGINEERING

4-hour Session

Constructed Wetlands for Water Quality Improvement

*Otto Stein, Department of Civil Engineering, Montana State University, Bozeman, Montana
Paul Lavigne & Terry Campbell, Water Quality Bureau Montana, Department of Environmental Quality, Helena, Montana*

Constructed wetlands (CWS) can no longer be considered a “new” technology with roughly 20,000 systems in operation world wide. Yet many states, including Montana, consider them an “experimental” system. This course will present a) an overview of potential applications of CWs b) a historical review of the technology c) contrast positives and negatives of the various types of CWs currently in use around the world with a special focus on domestic wastewater applications in cold climatic conditions and d) the current and future regulatory environment for CWs in Montana including an overview of the only two currently permitted municipal systems.

About the Presenters:

Dr. Stein is a Professor of Civil Engineering at Montana State University and has spent the last 10 years researching the application of constructed wetlands in cold climate applications. He is just finishing his term as an Associate Editor for ASCE’s Journal of Hydraulic Engineering and is continuing his role as the North American Coordinator for the International Water Association’s Specialist Group - Use of Macrophytes for Water Pollution Control (Constructed Wetlands). He has authored or co-authored over 20 publications on constructed wetlands and made dozens of presentations on the topic in locations as diverse as North America, Europe, Africa and New Zealand.

Paul LaVigne is the manager of the Water Pollution Control State Revolving Fund (WPCSRF) Program at the Montana Department of Environmental Quality (MDEQ) and has been with that program for the past 16 years. The WPCSRF program is responsible for reviewing the planning, design, construction and operation of municipal wastewater systems in Montana. The program provides technical and financial assistance to publicly-owned wastewater systems and also develops design standards and guidelines for wastewater systems in Montana.

Terry Campbell is an environmental engineer specialist within the WPCSRF Program at MDEQ. Mr. Campbell has over 21 years of experience in combined civil and environmental engineering both within the private sector and as a government employee. As a project manager within the WPCSRF, Mr. Campbell is responsible for project technology and construction oversight on a wide range of wastewater engineering projects within Montana.

WATER RESOURCES ENGINEERING

4-hour Session

Wetland Functions and Permitting – What an Engineer Needs to Know

Tom Hinz, Montana Wetlands Legacy, Bozeman, Montana

Taylor Greenup, Water Quality Planning Bureau, Department of Environmental Quality, Helena, Montana

Jean Ramer, United States Army Corps of Engineers, Helena, Montana

This “Wetlands 101” course will present information on the functions and values of wetlands; basics on wetland identification; the State Wetland Legacy Program; the state’s process for developing restoration plans for impaired water bodies (TMDLs and watershed restoration plans); the role of wetlands and constructed wetlands in pollution prevention and attainment of water quality standards; basic information on federal and state permit requirements; and potential funding sources for constructed wetland projects.

About the Presenters:

Tom Hinz is a wildlife biologist with the Montana Department of Fish Wildlife and Parks. Since 2001, Tom has coordinated the Montana Wetlands Legacy, a voluntary, incentive-based partnership to conserve wetlands throughout Montana. At last count, the Legacy represented about fifty of the primary government and non-governmental organizations with staff and resources dedicated to on-the-ground wetland conservation projects. Tom holds graduate and undergraduate degrees in Fish and Wildlife Management from MSU-Bozeman and has worked in the field of migratory bird habitat conservation since 1972.

Taylor Greenup is an environmental scientist with the Water Quality Planning Bureau at the DEQ and is responsible for nonpoint source pollution prevention and restoration of impaired waters. She has been working in the water quality planning field since 2003 and specializes in ground-water and urban-suburban-transportation nonpoint source pollution issues. She received a Master of Science Degree from the Department of Earth Sciences at MSU-Bozeman in 2003. She is an active member of the Montana Chapter of the American Water Resources Association, the Montana Watershed Coordination Council, and the Lower Tenmile Watershed Group.

Jean Ramer is a Regulatory Project Manager with the U.S. Army Corps of Engineers in Helena. She has been with the agency since 1989, and is responsible for the evaluation of applications for permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. She has been involved with the development and implementation of regional Clean Water Act policy and is currently involved with the re-issuance of the 2007 Nationwide Permits. She received a Bachelor of Science in Geography from the University of Nebraska, Omaha in 1993.