

# Research Flash

Volume 7 October 31 2003

## From the Director

### Match Dollars for Research

Recently I have fielded many requests for proposal match funds. In the past match requirements were generally met by using up to three months (520 hours) of faculty Fund I salary. The assumption is that a typical faculty member teaching two classes a semester devotes three months of funded time to research. Occasionally, UAF has supplied equipment funds for match also. Finally INE has provided small match amounts, generally as graduate student support.

UA discourages matching unless specifically required in an RFP, and many federal agencies discourage voluntary matching. However, there is an increased trend in agencies requiring match. The AETDL program, sponsored by DOE, requires a match of 25%. Neither INE nor UAF is in a position to produce these dollars, and we encourage researchers to partner with external businesses to meet this requirement. Last year INE had about \$100,000 (from F&A) that was not permanently committed and was potentially available for match; some was used for one-time start up money. But the recent 6% tax on Fund I and overhead dollars essentially removed all these funds. Our only avenue for flexible dollars is generating more overhead from research. We still return to the PI 10% of the overhead on full F&A (50.4%) projects; the PI is free to use this money as matching. For any project with less than 9% F&A, INE must pay UAF the difference. The bottom line is that INE is not presently in a financial position to provide significant matching on research projects, but we are working on several ideas to improve our matching leverage in the future.

– Douglas L. Kane

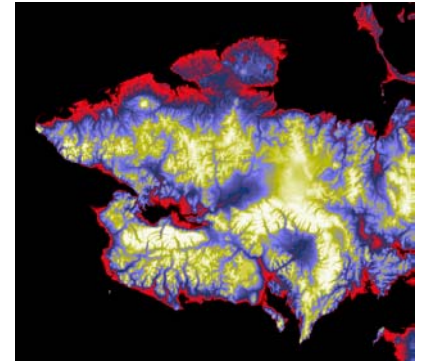
[www.uaf.edu/ine/index.html](http://www.uaf.edu/ine/index.html)

## Providing research and solutions for the world's cold regions

### Newly Funded Projects

#### **Waterworld**

PIs Lilian Alessa (Biology), Peter Schweitzer (Anthropology), Daniel White and Larry Hinzman (Water & Environmental Research Center), have designed a project geared toward understanding the vital role freshwater plays in the lives of humans in the Arctic, how this role has changed in the recent past, and how it is likely to change in the future. Researchers will conduct hydrological, cultural, and engineering studies throughout the Seward Peninsula. While hydrological data collection will take place throughout the peninsula, cultural and engineering studies will focus on five to eight rural communities.



Digital Elevation Map of the Seward Peninsula, courtesy of BC Johnson.

“Intersection Between Climate Change, Water Resources, and Humans in the Arctic” is part of a larger effort by the National Science Foundation, Arctic Systems Science, Human Dimensions of the Arctic System Program (HARC) (36 mos, \$1,646,686).

#### **A Better Stretch of Road**



Fatigue Cracking in Polymer-modified asphalt mix; photo courtesy of AKDOT&PF.

Alaska's drivers regularly see the intricate crazing of road surfaces, and they know that frame-shaking potholes are soon to follow. We all stand to benefit from a new material: polymer-modified asphalt. A number of studies (several performed at UAF) indicate that polymer-modified asphalt mixes last longer and respond better to Alaska's extreme conditions. But how does an engineer decide how much asphalt to use? Or how thick a layer? What aggregate mixes work best in which areas? What's the best temperature range for applying a mix?

Dr. Lutfi Raad of the INE Transportation Center is working with the Alaska Department of Transportation to answer such questions. Researchers will select several asphalt mixes that have proven effective in Anchorage, Fairbanks, and Southeast Alaska. With these samples, they will conduct flexure beam fatigue tests to develop fatigue design equations. Ultimately, Alaskan engineers can confidently use these equations to design exactly the right road surface for any Alaskan highway. “Fatigue Characteristics of Alaska polymer Modified Asphalt Mixes” is funded by the Alaska Department of Transportation & Public Facilities Research Program (9 mos, \$35,000).

#### **Crab Puffs INE Researcher**

The *Research Flash* staff is raging with jealousy over another newsletter, *The Erratic Crab*, which recently scooped the antics of Alaska Stable Isotope Facility Director and alleged caterer/exotic animal smuggler Mat Wooller. Visit the links below for expose, and for information about the Mangrove Biocomplexity Project.

<http://www.life.uiuc.edu/cheeseman/ecrab/>

<http://www.life.uiuc.edu/cheeseman/ecrab/ECv2n1/caribou.html>

*The Erratic Crab* and the Mangrove Biocomplexity project are made possible in part by the National Science Foundation under Grant No. 99-81309.

## **Three Card Monty, New Rules**

by Phillip Harrington, INE Executive Officer

A new cost transfer policy will become effective January 2, 2004. According to this new policy, "Both the government and the university recognize that cost transfers from one project to another are occasionally necessary to correct bookkeeping and clerical errors in the original charges. They also recognize that closely related work may be supported by more than one funding source, and transfer of costs may be required in these cases. Frequent, late, and inadequately explained transfers, especially those that involve projects with overruns or unspent balances, raise serious questions about the propriety of the transfers. In addition, the reliability of the university's accounting systems and internal controls are questioned when there are frequent transfers. Therefore, cost transfers must be monitored carefully in order to ensure compliance with federal regulations."

What this means to Principal Investigators is that there will be a 60 day time limit to move expenditures between various accounts and detailed explanations, justification and documentation will be required. The INE Business Office will continue to work hard with the PIs to make sure that allowable cost transfers are processed in a timely manner with the appropriate justification and documentation. A complete copy of the transfer policy will be available on the INE website: [www.uaf.edu/ine/businessoffice.htm](http://www.uaf.edu/ine/businessoffice.htm). I encourage each PI to take the time to review the policy statement.

## **INE On the Road**

At the Third International Symposium on High Performance Concrete, October 19-22, Civil Engineering Professor John Ma will present "Field Testing and 3D FE Modeling of Decked Bulb-Tee Bridges," by Ma, J Millam, S. Chaudhury, and JL Hulsey.

At the 2<sup>nd</sup> International Symposium on Underground Injection, at Lawrence Berkeley National Laboratory, Berkeley, CA; October 22-24, 2003 CEE professor Dr. Paras Trivedi presented two papers, "Short- and Long-term Fate of Trace Metal Contaminants in Anoxic Aqueous Environments as a Function of Background, Electrolyte and Temperature" (Trivedi, P., Sparks, D. L., Dyer, J. A., Scrivner, N. C., and K. Pandya), and "Predicting Trace-Metal Speciation in Aqueous Systems Using a Coupled Equilibrium-Surface-Complexation, Dynamic-Simulation Model (Dyer, J. A., Scrivner, N. C., Trivedi, P., Sparks, D. L., and K. Pandya).

## **INE Publications**

Ma, Z, Millam, J, Chaudhury, S, and Hulsey, JL. 2003. "Field Test and 3D FE Modeling of Decked Bulb-Tee Bridges," *Proceedings of International Symposium on High Performance Concrete*. Orlando, FL, October.

Liang, HL, Martin, JL, and Mogne, TL. 2003. "Experimental Investigation of Low-Temperature Ice," *Acta Materialia*, 51, no. 9, 2639-2647.

Yang, D, Robinson, D, Zhao, Y, Estilow, T, Ye, B. 2003. "Streamflow response to seasonal snow cover extent changes in large Siberian watersheds," *Journal of Geophysical Research – Atmospheres*, 108:D18, 4578. DOI: 10.1029/2002JD003149.

Nolan, M. 2003. "The Galloping Glacier Trots: Decadal-scale speed oscillations in the quiescent phase." *Annals of Glaciology*, Vol. 36, pp 7-13.

Wooller, MJ, Swain, DL, Ficken, K, Agnew, ADQ, and Street Perrott, FA. 2003. "Late Quaternary environmental change on Mount Kenya: multi-proxy evidence from Lake Rutundu," *Journal of Quaternary Science*, 18(1) 3-15.

Goering, DJ. 2003. "Passively Cooled Railway Embankments for Use in Permafrost Areas." *Journal of Cold Regions Engineering*, (17)9:119.

Kane, DL, Hinzman, LD. 2003. "Permafrost in a Dynamic Environment," *Permafrost and Periglacial Processes*. 14:89-91.

Nerella, S, Das, DK, Chukwu, GA, Dandekar, AY, Khataniar, S, Patil, SL 2003. "Heat Transfer Analysis for Gas-to-Liquids Transportation Through Trans Alaska Pipeline," *Petroleum Science and Technology*, Vol. 21, issues 7&8, pps 1275 - 1294 DOI: 10.1081/LFT-120018173.

## Notes from the INE Business Office

**TAMMY'S HR TIDBITS:**  
Faculty and PIs need to double-check the account numbers they are charging and having their students charge to on their time sheets. Also, unless the supervisor is out of town, student timesheets should be submitted to Tammy Platt after the supervisor has reviewed and signed it.

Next time you're surfing, check out the new INE HR website: [www.uaf.edu/ine/hr/](http://www.uaf.edu/ine/hr/)

There are some useful forms available, and more to come. Watch for more detailed information coming soon.

## WEB RENAISSANCE!

Check out new sites for:

The **INE Business Office:**  
[www.uaf.edu/ine/businessoffice.htm](http://www.uaf.edu/ine/businessoffice.htm)

**INE Human Resources:**  
[www.uaf.edu/ine/hr/](http://www.uaf.edu/ine/hr/)

and updated information at:

The **INE Proposal Page:**  
[www.uaf.edu/ine/proposal.html](http://www.uaf.edu/ine/proposal.html)

Do you maintain a research-related website? To feature it here, contact [ffslb@uaf.edu](mailto:ffslb@uaf.edu)

What do you use most on the INE site? What would you like to see? Contact [ffslb@uaf.edu](mailto:ffslb@uaf.edu)

For more info about the INE Research Flash, contact Sandra Boatwright at [ffslb@uaf.edu](mailto:ffslb@uaf.edu)

Submission deadline for issue #8:  
10 November 2003.