

Light as a Feather, Hard as a Rock

AS SOON as the Yahara River thaws each March, a crew of University of Wisconsin paddlers leaps in to train. The Badgers are months behind their rivals at the University of Alabama in Huntsville, where the water never freezes. No matter. These racers won't win on speed alone, but on whether their civil engineering classmates can build them canoes—out of concrete.

Since the first National Concrete Canoe Competition in 1988, each year around 160 college chapters of the American Society of Civil Engineers enter this contest, a combo of engineering brains and paddling brawn. As soon as the judges post the rules in September, teams race to design seaworthy canoes (weighing 100 to 350 lbs.) from a substance not known for its capacity to float. The athletes train. The engineers

think. “By the end, you know something about team play, and about working under pressure,” explains 'Bama engineering professor John Gilbert.

Unfortunately for Alabama, in 2004, Wisconsin squeezed out their second national championship in a row. The Badgers held their own in the water, and soared in the engineering round after co-chair Jaime Kurten explained the boat's transverse steel wire frame. As the teams prep for regional competitions this month and next, Kurten hopes to win again at the nationals in South Carolina in June. “No school has ever won three in a row,” she says. “They're all out to get us,” slicing fast behind them in the water—like a concrete canoe.

IT FLOATS ... HOW?

Water has a density of 62 lbs. per cubic foot. Anything with a lower density will float. Students lighten their concrete canoes with hollow glass microspheres and other low-density materials, and carefully design their boats' shapes to displace just enough water to keep four paddlers dry.

