

## **Proud ELF owner embraces alternative transport**

*By Richard Sloane*

Rick Fannin turns quite a few heads as he zips through the streets of North Carolina's Orange and Durham counties in his colorful locally manufactured ELF velomobile (see [text box](#)). What he's been driving since late October looks like a cross between a bicycle and a car, complete with solar panels, an electric assist, and a futuristic shape.

Fannin, a research biologist in the NIEHS Microarray Group, ordered his new ELF last summer and starting driving it to work last month. For fuel, he uses a combination of his own leg power and the vehicle's electric assist to make his 21-mile one-way trip to work from his home south of Chapel Hill. The fully charged battery lasts him the entire trip. As a backup, he has an extra lithium ion battery pack on board.

While not everyone can fit a bicycle into their daily lives for reasons of time, distance, safety, or weather, Fannin has found that velomobiles, like his ELF, lower the barrier to green transportation.

### **Self-reliant transportation that's safer than a bicycle**

Fannin said he first saw the ELF on the cover of the local Independent Weekly. He was fascinated by the concept of a covered, combination self-propelled and electric-propelled vehicle that had storage room and would be very inexpensive to operate. Following a test ride in early July, he ordered one just in time to avoid a scheduled price increase of \$1,000.

Fannin brings the battery pack into the office to charge on cloudy days, but leaves it in the parked velomobile on sunny days to let the solar panel recharge the battery. He uses the motor a good bit in the morning, to avoid getting too sweaty from pedaling. On the way home, he pedals more for the exercise. He has already lost a couple of pounds in the first few weeks of ownership.

The mirrors, lights, turn signals, and physical protection, from all but the worst natural elements, make it much safer than a bicycle. Fannin has driven his velomobile to work when the temperature was in the mid-30s. He said he warms up quickly when he's peddling, plus the windshield protects him from the icy air blast. He tries to travel shouldered roads, which gives motorists ample room to pass. He said most drivers seem to respect his rights on the road.

### **Trade-offs - time, exercise, and innovation**

Fannin's ride takes a little more than an hour, while driving his car takes about 30 minutes. Now, though, he doesn't need to spend an hour or more each day working out, so the time trade-off is about equal.

Although Fannin realizes he is probably pushing the envelope, physically, with the long commute, some through nonurban areas, he's committed to building his endurance. "One of the reasons I got the ELF was for an opportunity to exercise more regularly," Fannin said.

The proud ELF owner offers one caveat - "Keep the battery dry." He bought two, and one has stopped charging because it got wet. He said he hopes that once it dries completely, it will be all right. Recognizing this weakness in design, the manufacturer recommends that the battery, which comes wrapped tightly in plastic, also be protected with something like duct tape.

His velomobile does not require insurance. Maintenance costs are for simple chain cleaning, general lubrication, and adjustments that any bike shop can do. Tires, wheels, and components also are conventional and available at any bike shop.



*Fannin is proud of his eye-catching new machine. The mirrors, lights, and turn signals on the ELF, along with physical protection from all but the worst natural elements, make it much safer than a bicycle. (Photo courtesy of Richard Sloane)*



*According to Fannin, the ride is very much like a bicycle. The big difference is the assistance of a small electric motor for getting up hills and maintaining a good speed - approximately 20 mph - with the velomobile, which weighs about 115 lbs. The vehicle is fun to drive and comfortable in the recumbent seat, but, without shocks or springs, it doesn't always offer a smooth ride. (Photo courtesy of Richard Sloane)*



*The driver compartment keeps Fannin in touch with the road, but more protected from it and the weather outside than he would be on a bicycle. (Photo courtesy of Richard Sloane)*

(Richard Sloane is an employee services specialist with the NIEHS Office of Management.)

### **ELF - a local version of the European velomobile**

Velomobiles are relatively new in the U.S., although they have been in common use for years in the Netherlands, Denmark, England, and Germany. They offer green transportation in an aerodynamic protective shell, and are often based on a recumbent car-like seating configuration, which maximizes comfort and efficiency. World human-powered speed records are all set in velomobiles.

Vehicles like the ELF offer electric assistance, greatly expanded luggage capacity, and bright LED lighting for safety and visibility. Most are based on a tricycle configuration, although some are bicycles (see

<http://en.wikipedia.org/wiki/Velomobile>

(<http://en.wikipedia.org/wiki/Velomobile>)

for more details). ELF is made in Durham, N.C.

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