

# Chemists' glass made at UNL

By John Kalkowski

The intricate glass tubing which chemistry students rely on for experiments and which often amazes visitors, is not purchased in a five-and-ten store. Instead, two craftsmen produce these glass products in a basement room of Hamilton Hall.

Lloyd Moore and Tim Grauar work as a team on many of the projects in the glass-blowing lab. According to Moore, Grauar specializes in working with metals and glass, while he (Moore) does general glass-blowing work.

"But each professor has a different project," Moore said. The two often find it necessary to combine their talents on the projects, he said.

According to Henry Baumgarten, chairman of the Chemistry Dept., the glass-blowing lab, along with the electronic technicians and machinists, help make the chemistry experiments possible. He added that glass-blowing is a field which requires considerable skill and experience.

## Not large field

But the glass-blowing field is not a large one. Grauar estimated that there are about 550 scientific glass blowers in the United States.

He said scientific glass blowers differ from creative glass blowers because they often have more experience and because they rotate the glass while they heat it in the flame.

According to Moore, rotation is important because the glass becomes semiliquid and handles differently than

when it is solid. The rotation must be consistent to keep the glass from dripping, he said.

After heating the glass to a temperature of between 1,000 degrees C. and 3,000 degrees C., depending on the type of glass, Grauar said, the glass can be formed either by breath or by hand.

Besides the regular glass items, Moore said they must form complex vacuum lines and distilling heads as part of their work.

## Glass type depends

The type of glass used is dependent on how it will be used in experiments, Grauar said.

He showed a small one by one and one-half inch by one-eighth inch piece of quartz glass which was to be used as a lens for a laser. He said that the small piece costs \$22 because it is high quality glass.

Both Grauar and Moore have glass-blowing shops at home where they do creative work and repair work of broken items such as cocktail glasses.

Moore started glass-blowing when he was a chemistry major at Kansas University. Glass-blowing started as a part-time job at KU for Moore. After he learned the basics, it became a career.

Moore has been in glass-blowing for 18 years and has spend 15 years at UNL. When he first came to UNL, the glass-blowing lab was a one-man department.

In 1968, Moore was joined in the lab by Grauar. Grauar had learned glass-blowing at Los Angeles Junior College.



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