

PSU creates artificial membrane

By A. JOSEPH GROSSMAN
Daily Collegian Staff Writer

An artificial membrane network that may one day make implantable man-made kidneys and lungs possible has been developed by University researchers.

The membrane has been fabricated from sea coral and sea urchin molds by Eugene W. White, former professor of solid state science, and former graduate student William M. Hanusiak.

The University, through the Research Corporation of America, has received a patent for the membrane, whose most immediate potential use is in kidney dialysis equipment and in lung by-pass equipment used to temporarily sustain breathing.

About 100 times thinner than existing surrogate membranes, the new device could eventually revolutionize the

treatment of patients with such crippling or fatal lung ailments as emphysema, pneumonia and Legionnaires disease, Hanusiak said. It could also prove invaluable in certain operations and in keeping alive fire victims whose lungs have been seared, he said.

The membrane is made of synthetic silicon rubber and is fashioned into an intricate microscopic maze, he said. The device resembles the make-up of the human lung and its maze-like quality and high porosity offer tremendous medical potential, Hanusiak said.

"Unlike a kidney dialysis machine, which a patient can use intermittently to by-pass kidney function, existing lung by-pass equipment can be used at most for about a week — because the blood oxygenator slowly and progressively destroys the blood by breaking down its components," Hanusiak said.

The blood damage occurs because the artificial membrane is too thick to allow a swift blood-oxygen exchange and the blood must be sloshed around to get all parts of it up against the membrane, Hanusiak said.

Since the new membranes are about 100 times thinner than any now available and almost approximately the size and make-up of the lung's capillary system, they would allow swift and easy passage of oxygen to and from the blood components, Hanusiak said. This is the essence of the breathing process, he said.

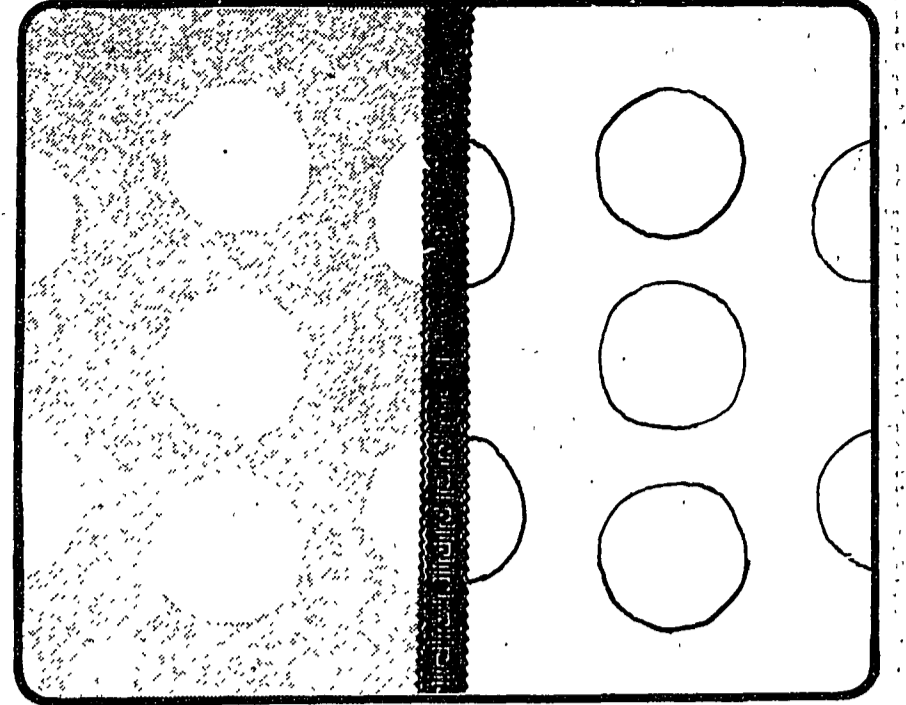
The new membranes are molded in the narrow spines of sea urchins, which have been cut into short cylinders and hollowed out. The microscopic maze of thousands of interconnecting passageways provides the basic pattern, Hanusiak said. White and his nephew,

Rodney White, tried to shape this structure into something that looked like a lung.

"The membranes are so much thinner and therefore more effective than any now available," Hanusiak said, "both because they are copied from a network that is very close in size to the membranes found throughout the human body and because they could be made microscopically thin since they are not handled."

The most intriguing element of the new membrane is that it has diverse potential for many body processes, according to Hanusiak.

Even with the proper financial backing, Hanusiak said, it will be at least five years before the membrane could be made available for practical use.



Board of Trustees will meet

The University Board of Trustees will hold two days of meetings beginning this afternoon at 2:30 p.m. in 403 Keller.

The Committee on Educational Policy will hold the only meeting today. Four informational reports are included on the agenda.

The first report will be on the

continuing education activities and enrollments. Another report will present the final 1977 fall term enrollment figures.

The committee will also be informed on the intermediate and long-range policy of the University and about the basic skills program.

The physical plant committee will

meet Friday morning. The major item on the agenda will be a report on the physical facilities planning and review commission.

The status of the 1977-78 state appropriation will be the first item considered by the committee on finance at its 10:30 a.m. meeting Friday.

— by Harry Glenn

Demos gloat over victories

GOP 'going way of Prohibition'

PHILADELPHIA (AP) — The Pennsylvania GOP appears to be going the way of the Prohibition Party. The Democrats drank to that yesterday.

They toasted an election that often was boring, but one in which Democrats thumped Republicans in state-wide and big city races, leaving the GOP in poor shape for the state's political contest in 1978.

That's when the voters carve up the turkey, picking a governor, 25 congressmen, 25 state senators and 203 state representatives.

Tuesday's turnout was one of the lightest in years, even for an off-year municipal bout. It's expected less than half of the state's registered voters had their say.

The Republicans had hoped for a backlash against the shenanigans of Democratic bigwigs like state Sen. Henry Cianfrani, currently under indictment, and former House Speaker Herbert Fineman, recently convicted of obstruction of justice. But the GOP voters in many towns stayed home out of the rain.

Analysis

The Republicans were blown out of the water in Philadelphia and Pittsburgh, the state's two largest cities. They finished third in a three-man race for mayor in Pittsburgh even though

their candidate was a former Democrat. As a result of Tuesday's results, the Republicans, for the first time in 250 years, will not represent a majority of the seven Supreme Court justices.

The GOP won only one of three special House contests. It had hoped to win two. And in two dozen third-class cities which were electing mayors, less than half selected Republicans.

In Philadelphia, where Democrats enjoy a 7-2 registration edge, Republicans are more of an embarrassment than a force in politics. Despite a heavy financial investment, they were unable Tuesday to come within 100,000 votes of two Democratic opponents for district attorney and controller.

Trustee nominees face interview

The five nominees for the University's student trustee position will travel to Harrisburg today to be interviewed by the state secretary of education, according to Undergraduate Student Government President Grant Ackerman.

Ackerman said he thinks education secretary Caryl Kline will probably designate one of the five as her choice for trustee in time to send him or her to the Board of Trustees meeting Friday.

Ackerman said the trustee would probably not attend the meeting in an

official capacity, since Kline's choice must be approved by Gov. Shapp before the appointment becomes official.

Ackerman said he got the impression from speaking with Kline that she would interview the five nominees in a "round-table" situation instead of individually.

An Open Letter to the Penn State Community:

November 10, 1977

Penn State is in the midst of one of the worst financial crises in its history. With the fiscal year already in its fifth month, the University has not received one cent in State appropriations. To deal with this crisis, we need your help. Along with instituting many internal austerity measures, the University — to continue operating — has had to borrow more than \$36 million to date. Interest costs are now running \$4,000 per day and are mounting each month. By the end of November, we will have paid approximately \$325,000 in interest charges. These interest charges — which take money away from the educational programs — will ultimately be borne by students, their families and other taxpayers. The absence of State funding places in jeopardy the ability of Penn State to continue orderly operations of its programs and services. On November 14, the General Assembly will return from its recess to continue deliberations. Penn State has not advocated any single solution to the crisis, but we have pleaded continually for an early and equitable solution. Some believe an increase in taxes will be essential if the problem is to be solved. Others feel that at least some of the revenues can be made available from existing sources. Bipartisan cooperation is indispensable for a solution.

Because of the gravity of the situation and the stake every member of the Penn State community has in this matter, we are asking for your help.

To the students: The quality and continuation of your education are at issue. Take ten minutes out tonight or tomorrow to write your State Senator and Representative to voice your concern. While at home during the term break, ask your parents to write, call or visit their Harrisburg representatives. (A letter will also be going to your parents urging their help.)

To alumni: You have already received a letter from the Alumni Executive Board asking you to contact your legislators about Penn State's crisis. We urge you to followup on this request as soon as possible.

To faculty and staff members: Acting in your role as a private citizen and taxpayer and using your personal stationery, do join us in writing your legislative representatives urging them to provide the full funding needed to maintain Penn State's programs.

To people of the Centre Region: We ask you to contact your Senator and Representative. You are aware of the interdependence of the University and the local communities of which we are all a part. The University employs, full and part-time, approximately 14,000 people from State College, Bellefonte, Tyrone, Philipsburg, Lewistown, Pleasant Gap, Milesburg, and many other communities. The magnitude of the economic impact of the University to this area is enormous. Just two figures: The annual payroll of the University Park Campus alone is \$130 million. In addition to the \$130 million payroll, the University's purchases of goods and services, along with the spending of 32,000 students, add more than \$75 million per year to the economy of the region.

Will each of you — students, alumni, faculty, staff and Centre Region citizens — take ten minutes out today or tomorrow to write your local legislators and the leadership of the House and Senate, urging them to find an early and equitable solution for full funding of Penn State's appropriation? Thank you.

House and Senate Leadership

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Majority Leader
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The Hon. Henry G. Hager
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The Hon. James J. Manderino
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