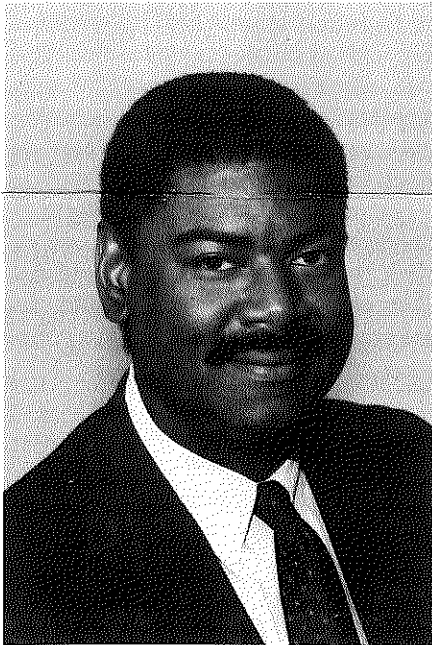


The Abell Report

What we think about, and what we'd like you to think about

Published as a community service by The Abell Foundation

William L. Jews Elected Director of Abell Foundation



William L. Jews, the president and CEO of Liberty Medical Center, Inc., has been elected to the board of directors of The Abell Foundation.

Before joining Liberty Medical Center in 1982, Jews was assistant director of ambulatory services and director of planning at the University of Maryland. He is a 1974 graduate of Johns Hopkins University; he attended the Graduate School of Urban Studies and received his masters in Urban Planning and Policy Analysis from Morgan State University.

Active in business and civic affairs, Jews is chairman of the Governor's Task Force For Comprehensive Trauma Rehabilitation.

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University - Affiliated High-Tech Business Incubators: An Idea for Creating Jobs, Reducing Failure, Strengthening Maryland's Economy

"Increasing the paydays in Maryland"

The heart of a community beats to the rhythm of paydays. Its character is linked to how much money citizens have for basics--food, clothing and shelter; how much is left to support institutions (schools, hospitals, museums); how much for amenities (symphonies, parks, parades). When employment is down, the heartbeat grows faint; when employment is up, the beat is strong. Jobs are the adrenaline.

Jobs are why jurisdictions race to attract new businesses; jobs are the main reason they invest in tourism, education, and economic development. One of the job-creating ideas attracting growing attention around the country and around the world is the business incubator. Relatively new in the economy, the oldest in the country has been in operation only 25 years, and most of the roughly 300 incubators in business today are less than five years old. They are currently operating in 40 states.

What accounts for this historic growth? Why the intense interest in incubators? Are they successful, and by what criteria? Where does Maryland stand in establishing incubators, and does the idea hold promise of creating jobs and of contributing to the economic well-being of the state?

According to the National Business Incubator Association, "Business incubators are facilities that provide small

entrepreneurial businesses with affordable space, shared support and business development services such as financing, marketing and management. Incubators play a nurturing role in helping young businesses survive and grow during the start-up period when they are financially vulnerable."

And within that definition there are still other definitions: the types of incubators:

***Public or Not-For-Profit** Sponsored by government and non-profit organizations, they are established primarily for economic development purposes: job creation, economic diversification, expansion of the tax base. They make up 47% of the U. S. incubator market.

***Private** They are set up and run by venture and seed capital investment groups, or by corporations and real estate development partnerships whose primary interest is economic reward from investing in the tenants. They make up 24% of the U. S. market.

***Academic Related** Incubators affiliated with universities and colleges share the same objectives of public and private incubators. In addition, they offer entrepreneurs the opportunity of faculty research; and faculty, with start-up business opportunities. They make up 14% of U. S. market.

***Public/Private** The partnership is a result of a joint effort between government or non-profit agencies and a private developer, and gives the start-up business access to government funding

and financing. They make up the remaining 14% of the U. S. incubator market.

Incubators are a marketplace response to marketplace failures. Candace Campell, in her definitive study, "Change Agents In the New Economy: Business Incubators and Economic Development," (University of Minnesota, 1988) summarized her extensive research looking into why incubators have come into being: "The majority of jobs created in the economy are created by new, small firms, but studies of the dynamics of business formation and growth show that new small businesses in general have limited prospects for employment growth. Business incubators offer a solution to the small businesses' problems of information costs, restricted capital flows, lack of technology transfer, and unequal

Small Business = Jobs

opportunity, by providing space, shared services, business assistance and financing.

"There is a naturally occurring birth and death rate of new firms, with technology-based firms and other capital-intensive firms failing at a lower rate than manufacturing, retail and services firms. The establishment of branch plants started elsewhere may create more new net jobs than local start-ups, at least in the short run. But there is a growing importance of small firms, particularly in declining economies and industries. From these factors, it seems logical that shoring up the base of small business and nurturing new business formations will be more important than attempts to attract employers from outside."

Throughout the country, business incubators operate in a variety of models, with a variety of objectives and operations policies. They are public, non-profit, private and university-affiliated; they are set up to accommodate light industry, service businesses and high-technology businesses. Given Maryland's aspirations in economic development, it is the experience of the university-affiliated, high-technology incubators that should command the interest of area leadership.

Maryland in general and the

Baltimore area in particular are currently benefiting from a low unemployment economy. Maryland's and Baltimore's concerns should therefore be to promote businesses of the future that will grow from new ideas with an engineering or scientific origin.

In attempting to evaluate the effectiveness of university-affiliated high-tech incubators, students of the industry use three criteria:

- 1) What is the rate of job creation? At what cost? Compared to what?
- 2) Does the incubator environment reduce the rate of failure of start-up, high-tech businesses?
- 3) To what extent do university-affiliated, incubator-nurtured high-tech businesses contribute to the local economy?

A study of the fledgling industry overall by the Association of University Related Research Parks reveals that in this country there are 108 university-affiliated research parks up and running, with seven more in planning; they occupy about 66,000,000 square feet in about 1,000 buildings on 70,000 acres, housing 2,100 companies and employing 175,000 employees. According to Christopher Boettcher, executive director, Association of University Related Research Parks, about half of these resources are dedicated to high-tech businesses.

But how well do they work? How effective are they at what they set out to do? Do they meet the criteria of job creation, reduction in the rate of failure

How well do they work?

of start-up high-tech businesses, and contribution to their community's economic development?

While a certain amount of hard numbers on the amount of jobs created is available, data on how well the incubators do in terms of reducing the rate of failure and on their contribution to the community is scant, and soft.

Georgia Institute of Technology lists itself as having created 1,100 jobs since 1980. Its director, Dr. Richard Meyer, says that the incubator facility, Advanced Technology Development Center, takes

credit for sharply reducing the rate of failure of start up high-tech companies. "From my experience and in my judgment, on a scale of one to five, I'd give us a four on that. And as for our center's contribution to the strength of the local community, I'll claim another four."

Science Park Development Association, affiliated with Yale University, was founded in 1982. Its director, Trip Peake, says the association has created 1,024 jobs, and that although in his view it has reduced the rate of failure of start-up high-tech companies, its contribution to the local economy has been less than expected. "Incubators," he says, "appear to improve the health of a healthy economy, but they seldom if ever do much for distressed areas."

The Incubator Center at Rensselaer Polytechnic Institute in Troy, New York, was founded in 1980, and has since created more than 500 jobs, according to its director, Mark Rice. Rice

"technological knowledge is transferred..."

tracks the success rate of his start-up businesses and his records show that his rate is high--"much higher than it is for businesses starting up outside of an incubator's resource-rich environment. In seven years," Rice says, "the program has helped to spawn dozens of enterprises. Over twenty companies have graduated from the incubator--only three went out of business. Of these, ninety per cent have remained in the Troy area. To me, this indicates that the program has been successful in bolstering regional growth of high-technology business and increasing the attractiveness of RPI's academic environment. Several fledgling companies are already producing products such as pharmaceuticals, solar collectors, robot control systems and automated test equipment. But there is another large benefit that accrues to the business, the university and the community. It is the transfer, both ways, of technological knowledge."

The University City Science Center was established in 1963 in Philadelphia. It is a private, non-profit corporation, the first urban research park and

the oldest business incubator, and the largest science and technology consortium in the nation.

According to Gordon Carlisle, vice-president, "By various measures, the economic benefits generated by the center's development of regional resources in science and technology are substantial." He lists:

- * Capital investment of over \$90 million, to develop 1.5 million square feet of mixed use office space in 12 buildings;

- * Over 100 company start-ups, of which 35 companies currently employ over 1,900 people.

- * Over 6,075 people currently employed by 105 organizations based at the park.

- * Over \$68 million in cumulative city wage and real estate taxes generated.

- * Over \$85 million in project grants and contracts awarded to the center's R&D laboratories and consultancies.

- * Over \$2 million invested in five seed capital funds of which the center is a lead limited partner.

As for the center's record for reducing the rate of failure of start-up high-tech businesses, Carlisle says, "Technology companies have a lower incidence of failure in general, and incubator-nurtured tech businesses tend to reduce failures to an even greater degree."

"Incubators are doing what they are supposed to do..."

Summarizing the performance overall of university affiliated high-tech businesses operating within incubators, Boettcher says, "It's my observation, in the end, that they are by and large doing what they are supposed to do. Everywhere in the country I visit these types of incubators, I see full buildings, with thriving entrepreneurs creating jobs and invigorating their communities. Of course, there are failures, but, overall, their success rate, by whatever criteria you use, compared to start-up high tech businesses operating outside of the incubator environment, is amazing."

As it turns out, the spectacular growth of business incubators around the world is taking place at a time when Maryland itself is seeking to foster economic development through, among other initiatives, the expansion of its high-technology industry.

There is now a considerable effort in Maryland to build a high-tech industry that can take its place among the country's high-tech centers. The University of Maryland at College Park, University of Maryland at Baltimore County and Johns Hopkins are all actively, and competitively, engaged in developing business incubators in which to nurture high-tech businesses--with their rich potential for job creation and economic development.

The sad fact is that Maryland has only one operating university-based incubator, and that, operating in the suburbs of College Park, occupies only 8,000 square feet. The Baltimore area, without a single such facility, is probably the only large metropolitan area in the country with such a void.

The University of Maryland at College Park has been sponsoring an incubator as part of its Engineering Research Center since 1984. The Technology Advancement Program (TAP) is committed to "promoting the economic development of the area by creating new companies and new jobs, and to enhancing the reputation of the University of Maryland by attracting faculty and students who wish to collaborate with industry."

The College Park incubator now houses 16 high-tech tenants whose businesses include electronics, fiber optics, biotechnology and software development. One of the most successful of those tenants, Soviet-emigre Alex Severinsky, says of his experience, "I walked in and everything was there. Even though I was just a small business, I had all the amenities of a very large company. It was like working for IBM." Severinsky is not IBM, but in just three years his Viteq, which manufactures back-up generators for micro- and mini-computers does a sales volume running at an annual rate of \$3,000,000 and employs 40. He has "graduated" and now operates in larger facilities in nearby Lanham. Further expansion in the BWI area will add some 30,000 square feet of manufacturing facilities with approxi-

Abell Salutes: The "Book-It" Reading Program at Lyndhurst Elementary

One of the best ways to improve reading skills is to read. That is why Linwood Roberts, principal of Lyndhurst elementary school, has instituted an outside reading program with his students that has resulted in their reading over 8,500 books during a four month period last year (8,000 more through January of this school year). The apparent success of the program raises the question of why it shouldn't be replicated in every elementary school in the city.

Roberts says, "The effort can't help but make itself felt in test scores later on." Mrs. Vivian Jones, parent of a student in the school, says, "It encourages (my son) Steven to read, and the whole family to read, together." Second grader Troy Manley says, "I love it because it's now fun to read, and I get to go to the library more."

Educator, parent and student are talking, zealously, about "Book-It," the reading program begun by a small group of true-believers at the all-black West Baltimore elementary school.

Book-It is a rich mix of academics, administration, merchandising and love. It is designed to educate by immersing students at a very young age into the world of words; to keep them disciplined to it by attentive nurturing, and to help them graduate from it through a program of creative incentives.

Book-It has its 500 students programmed to read no less than 10,000 books in six-months of a school year, which translates roughly as having each child reading 24 books in the year, four books per month, one book a week. It is an ambitious schedule of reading well beyond peer schools.

What distinguishes Book-It at Lyndhurst from other reading programs is the intensity of it--the unbridled energy on the part of school, students and parents. The corridors are emblazoned with charts of stars and bars recognizing and cheering performance; there are colorful announcements of meetings and

mately double the work force.

Has the College Park incubator met its mission to "promote the economic development of the area by creating new companies and new jobs and to enhance the reputation of the University?" Dr. Herbert Rabin, director, Engineering Research Center, and Associate Dean, answers this way: "Incubators in my view are here to stay--they serve a critical interest. They promote creation of new business--in our case, advanced technology companies--which will reside in Maryland, create Maryland jobs, and expand the base in Maryland for growth in technologies for the future. Besides the number of start-ups around the country which can't really be quoted accurately--in our case, over 20 companies, 125 jobs, and almost \$10,000,000 in funds invested--there are also immeasurables of great importance. For example, promoting an entrepreneurial environment is an important ingredient to stimulate progress, and successful entrepreneurship is contagious. The other factor I would emphasize is the relative speed with which a company may progress through its early stages by participating in an incubator program.

*Maryland has only
one such facility;
Baltimore has none.*

"We will see, and should see, evolution in the basic incubator process. For example, there is yet to be established in Maryland a means for financial assistance for incubator participants."

Johns Hopkins University is currently developing for early 1989 occupancy its Triad Technology Center at its 130-acre Bayview Research Campus in southeast Baltimore; its plan is to provide a salubrious environment for the growth and development of life sciences and, in particular, medical biotechnology companies. The 130,000 square foot Triad Center itself is situated inside the park; its research wing offers 65,000 square feet of net usable space, and space is available within it for up to 18 incubator labs in 400 square foot modules with shared facilities for small start-up businesses.

According to David Hash, director, the center's potential for creating jobs, for reducing the rate of failure among start-up high-tech businesses and for making a strong contribution to the local economy are all very promising. "We are also focusing on the commercialization of Hopkins' science, and incubator facilities are essential to that process. We're talking about creating no less than 350 jobs."

The University of Maryland at Baltimore County has assembled 8,000 square feet of usable office and lab space on its campus in Catonsville. Bernard Berkowitz, formerly director of Baltimore Economic Development Corporation who is now supervising the UMBC program, expects to have tenants moving in this winter, beginning with Biotrax, Inc., and is looking to accommodate between six and ten start-up biotech, electro-optics, photonics and artificial intelligence companies. But these plans, and the full development of the facility, are contingent on the state's providing \$175,000 in operating funds.

*The bottom line:
the state needs to expand its
university-affiliated high-tech
incubator programming.*

The facility would be particularly important in that it would help to translate ideas from the UMBC laboratories, and those of the University in downtown Baltimore, into new businesses.

* * *

High-tech, university related incubators appear to be one of, if not the most successful type of incubator because of:

- 1) the prestige of the location to help new business establish legitimacy.
- 2) the availability of highly skilled, hard working and reasonably priced labor among the student body.
- 3) access to university equipment, library and personnel.

As has been pointed out, despite the large and growing number of university based incubators and the Baltimore region's goal of participating in the

projected high-tech world economy, there is not one such facility in the region. In fact, there is not one such facility in the region, and there is only one in the state. That is the small but highly successful and growing facility at College Park.

Only 13 per cent (an impressively small number against non-incubator failures) of the firms entering incubators have failed. Such incubators are not only alive and well but proliferating. According to June Lavelle, chairman of the executive committee of the National Business Incubator Association, "Far and away most of them that started up are still in business and flourishing, and increasing numbers of them are in the planning stages or opening up."

There is a bottom line conclusion for Maryland: it is that continued expansion of the state's program of university affiliated high-tech incubators is a promising way of increasing the number of jobs -- and paydays for Marylanders.

BOOKIT

Continued from Page 3

assemblies and awards and ceremonies. Parents are kept involved and supportive; children are given a free book at the kick-off of the program; there has even been a parade of students and teachers--complete with placards and music and cheerleaders--winding through 15 blocks of the Wyndhurst neighborhood. Reading at Lyndhurst is not just taught, it is celebrated.

Although after only a year and a half, it may be too soon to measure results, Roberts is optimistic. "I see students moving to higher reading levels more rapidly, and a decided increase in pupil enthusiasm for reading. They order more books, they talk more about books, they're reading more books. As for hard data, we're looking to the year-end California Achievement Tests. And if we show significant gains, one would have to conclude that Book-It is most likely one contributing factor."

And one which The Abell Foundation--borrowing a Book-It technique--is privileged to recognize and cheer.

And join the celebration at Lyndhurst.