

Feb. 4, 1985

Approved

Jayne Aylward  
Date

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY.

The meeting was called to order by Representative Jayne Aylward at  
Chairperson

3:30 ~~a.m.~~/p.m. on January 28, 1985 in room 522-S of the Capitol.

All members were present except:  
Representative Love (excused)

Committee staff present:

Ray Hauke, Research Department  
James A. Wilson, III, Senior Assistant Revisor  
Jean Mellinger, Secretary to the Committee

Conferees appearing before the committee:

Dr. William J. Wilhelm, Dean of College of Engineering and Interim Director of the Center of Productivity Enhancement of Wichita State University  
Dr. Frances Horowitz, Vice Chancellor for Research, Graduate Studies and Public Service, Kansas University  
Dr. Takeru Higuchi, Regents Professor, Pharmaceutical Chemistry, and head of the Center for Excellence, Kansas University  
Dr. David McFarland, Dean of School of Technology and Applied Science, Pittsburg State University

Chairman Jayne Aylward opened the meeting. She introduced Dr. Bill Wilhelm who spoke on the Wichita State University Center for Productivity Enhancement (Attachment 1). The thought was that it should be a center of excellence focused on attempting to protect manufacturing industries that already exist in the state and are located primarily in the Wichita area and should have four focal areas--CAD/CAM, Robotics, Artificial Intelligence, and Composite Materials.

The chairman asked Dr. Wilhelm to explain composite materials. Dr. Wilhelm replied that composite materials are new materials that are made up of a variety of plastics, graphics, and things of that sort that are combined to make some rather sophisticated, high strength materials. Chairman Aylward mentioned the cooperation with NASA and asked if they were using these in the space program. He replied they were.

Chairman Aylward asked if there was any crossover in what K-State is doing in their Robotics Program as opposed to what Wichita State is doing. Dr. Wilhelm was unsure but suspected that there may be some overlap although he understood that K-State's program was to focus on agricultural related activities.

Representative Friedeman inquired whether the funds for the original matching, with which the Wichita State Endowment Association assisted, were funds they already had on hand or were new funds. Dr. Wilhelm replied that they sought these funds from a variety of industries there in Wichita and they were new funds.

Representative Friedeman asked if the coordinators of the program were full time in that capacity. Dr. Wilhelm said they were half time or quarter time in other academic programs and spent the remainder of their time in the center.

Representative Friedeman asked if in his opinion the four research programs were obtained because they had the Center of Excellence or would they have gotten them anyway. Dr. Wilhelm said they would like to think they would have a research program without the Center; but they think the Center will enable them to have an even better research program. Representative Friedeman inquired, if in the feedback from the industries, they were excited about it. Dr. Wilhelm replied that the response to that would be mixed. Big industries in Wichita are very excited about it and supportive of what they are trying to do, but the 180 small manufacturers need to know it better and their reactions might be mixed.

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY

room 522-S, Statehouse, at 3:30 ~~xxx~~ p.m. on January 28, 19 85

Representative Green asked if this had been on board long enough so that new students would be recommended to WSU as a result, and he referred to the refinery and their use of Wichita State for training programs. Dr. Wilhelm said the Center will mainly focus on the graduate program with emphasis on the four areas mentioned which they think are very timely and will attract students.

Representative Helgerson inquired if they had a number of professors working part time at the Center and part time as Department Heads. Dr. Wilhelm replied that the coordinators hold joint appointments, half time concentrating on their activities for the Center and half time in one of the academic departments. Representative Helgerson asked if the research papers that are being completed are by individuals who are half time at the Center. Dr. Wilhelm replied that one is and the other four papers will be presented by other faculty members.

Representative Dean inquired if the four areas where they have heads were new or whether they utilized people on board. Dr. Wilhelm replied that two were on board, one was just hired, and a search is ongoing for the other. Representative Dean asked if he thought these areas will attract extremely high quality people. Dr. Wilhelm said that these positions are attractive to a variety of people around the country but they are having a difficult time because of the salary level. Representative Dean inquired if they used these high quality people also in the Graduate School which would enhance the Graduate School. Dr. Wilhelm said that was right.

Chairman Aylward stated that HB 2006 was the funding mechanism for the Centers of Excellence this year and it has a \$210,000 figure to fund each of the Centers and asked if he felt that was adequate. Dr. Wilhelm thought that fund will enable them to continue the startup and establishment of the Center. He added that the two issues they were concerned with were the issue of continuity for which they look to the Legislature at some point to put the funding for the Centers into the university base, and secondly was the matching funding because we do not have a long history of Kansas industry involved in matching funding. The chairman said they are supposed to have a dollar for dollar match on that part that is not used for salary and wages and asked if they were getting dollar for dollar or better participation from the outside community for that. Dr. Wilhelm replied that the first year they were only able to raise \$95,000 but had attracted some research work and thus gained more than required. Now they have a drive underway to raise the \$80,000 and have again attracted some research funding.

Richard Von Ende, Executive Secretary, Office of the Chancellor, University of Kansas, introduced Dr. Frances Horowitz and Dr. Takeru Higuchi.

Dr. Horowitz explained how they went about establishing the Center of Excellence at the University of Kansas. She stated that in a study in the University of New York, they were told that state leaders are sensitive to the importance of their major universities and states can no longer expect to attract companies on the basis of harbors or major rail or highway networks. Modern employers, especially those in high technology fields, seek a steady supply of educated employees and the intellectual backup that comes from research facilities at major universities.

Dr. Higuchi remarked that if Kansas is going to compete in this area we can not compete in what is currently high tech. Gradually, as times goes on, what is considered to be high tech ceases to be high tech. Kansas needs to identify what might be an embryonic area and will result in something that will be meaningful in the future. He stated their three goals, which he thought was the intent of the committee, were 1) to create a high technology research center of high stature in the University of Kansas; 2) to create a viable new high technology industry in the State of Kansas which will create employment for a large number of technically trained individuals and add to the economic base of the state; and 3) to create a substantial amount of money for the Endowment Association which will benefit the University which, in turn, will benefit the state as a whole. He described plans for an industry to be developed out of the Center (Attachment 2).

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY,

room 522-S, Statehouse, at 3:30 ~~am~~/p.m. on January 28, 1985.

Chairman Aylward asked what he was referring to when he mentioned a hundred million dollars. Dr. Higuchi answered the reference was to market potential.

Representative Campbell inquired if the University owned 20% or the Endowment Association owned 20%. Dr. Higuchi replied that the University could not own any of it but the Endowment Association owned 20%.

Representative Roper asked if one of the main objectives of this was to induce high technology industries to come into the state. The chairman said that was part of the basis for setting up the Centers. Representative Roper asked how Oread would do it. Dr. Higuchi replied that this was a new industry and in his evaluation trying to induce other industries to come into the state is not as effective as creating your own.

Representative Helgerson inquired concerning the number of new employees in the state. Dr. Higuchi said he estimated one thousand. Representative Helgerson asked what kind of funding they were wanting from the state after the first several years. Dr. Higuchi said they would look to the state for a significant amount but intend to get the bulk of their budget from federal sources. Representative Helgerson asked if the State of Kansas is going to have to pump in more money in two or three years, or if the corporation would help. Dr. Higuchi said the corporation would not help with the funding but would generate income tax for the state.

Representative Green asked how this would benefit the whole State of Kansas. Dr. Higuchi said that figuring the money brought into the state, the income tax it would generate would far exceed the investment the state has made.

Representative Friedeman asked what the flow chart showed going from OLI to the Center, income or royalty. Dr. Higuchi said that OLI would support research in the Center for their objectives but not basic research. Representative Friedeman inquired as to who holds the patents on anything discovered. Dr. Higuchi replied that they were normally held by the University which assigns their exploitation to the Endowment Association. Representative Friedeman asked if they get an agreement from the students or researchers before they start research. Dr. Higuchi assured him they signed agreements to turn over the patent rights to the University.

Representative Aylward asked if Dr. Higuchi agreed with Dr. Wilhelm that he would rather have the funding through the regular University base. Dr. Higuchi replied that he felt it would provide more stability to the program.

Representative Dean referring to their desire to have a second center, asked what level of funding a second center would need and when Dr. Higuchi sees that, that might happen. He replied that, that was up to the pleasure of the legislature but he would think that the initial plan should be sufficiently demanding as to require a mechanism by which early commercialization of the technology will occur.

Representative Dean inquired if we had more than one center at the University if one would be taking away from the other and the first might not advance. Dr. Higuchi said that if you could generate a \$25 million industry for every Center of Excellence that is established, that would be a very good investment. Representative Dean asked if sometime the Center would operate without aid from the state. He replied that in terms of cost to the state, it is relatively small, but in terms of research, it is very big. Representative Dean asked at what point it would be healthy to start a second center with the current amount of funds. Dr. Higuchi replied that if that was all that was available, he wouldn't start another center. Representative Dean stated that he was concerned about the Computer and Communication Center of Excellence which he would like to see started but he would not want to jeopardize what is already started by starting another center because he doesn't think the state is going to give them any more money. Dr. Horowitz stated that they were ready to go on the other center when the funds were available.

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY,

room 522-S, Statehouse, at 3:30 ~~a.m.~~ p.m. on January 28, 1985

Representative Chronister stated that the reason for the creation of the Centers of Excellence was basic research, research that is not always productive of an outcome.

William Hollenbeck, Assistant to the President, Pittsburg State University, introduced Dr. David McFarland who spoke on the potential relationships with the Center of Excellence and relationships with grants and technology and gave a brief description of their School of Technology and Applied Science. He distributed a sheet, Technology Continuum (Attachment 3); a letter to the Kansas Board of Regents (Attachment 4); and a report to Amend Capital Improvement Legislative Request (Attachment 5).

Representative Chronister inquired whether, when they make a presentation to the committee on a Center of Excellence, they plan to outline the program in terms of promoting basic research or technology transfer later on. Dr. McFarland thought they would make their presentation based on applied research or technology transfer when they make it.

Rep. Friedeman asked if there was a scenario in this program whereby they might do something like KU has. Dr. McFarland said there was. Representative Friedeman asked what kind of a business originally was moving from Minnesota. Dr. McFarland answered a wood manufacturing company.

Chairman Aylward asked if there was any other state that has anything comparable to the Centers of Excellence dealing with wood. Dr. McFarland said there was none.

Representative Friedeman mentioned they could get the money for research now and asked if they waited 12 to 18 months if they still could get the money. Dr. McFarland said he thought they could.

The Chairman asked when he thought they would be coming to the legislature to ask for a Center of Excellence. Dr. McFarland said it depended on a number of things.

Representative Dean moved that the minutes of the January 23, 1985, meeting of the committee be approved. Representative Chronister seconded the motion. The motion carried.

The meeting adjourned at 5:15 p.m.

The next meeting of the committee will be held at 3:30 p.m. on Tuesday, January 29, 1985.

STATUS REPORT

WICHITA STATE UNIVERSITY  
CENTER FOR PRODUCTIVITY ENHANCEMENT

Presented by:

William J. Wilhelm, P.E.

Dean, College of Engineering

Interim Director, Center for Productivity Enhancement

January 28, 1985

*(Attachment 1)*  
*1/28/85*

FUNDING

<u>1983-84</u>	\$130,000	State Funds (Available July 1, 1983)
	\$195,000	Matching Funds (Available April 1, 1984)
<u>1984-85</u>	\$160,000	State Funds (Available July 1, 1984)
	\$80,000	Matching Funds (Drive underway)

ORGANIZATION

Interim Director* (Funding 1.0 COE)	-Dr. William J. Wilhelm, P.E. Dean, College of Engineering Wichita State University
Associate Director (Funding 0.5 COE, 0.5 CPE)	-Dr. Richard Graham Professor, Mechanical Engineering Wichita State University
Coordinator CAD/CAM (Funding 0.5 COE, 0.5 CPE)	-Prof. John O'Loughlin Assoc. Professor, Electrical Engineering Wichita State University
Coordinator Composites (Funding 0.75 COE, 0.25 CPE)	-Dr. Bert Smith Professor & Chair, Aeronautical Engineering Wichita State University
Coordinator Robotics (Funding 0.5 COE, 0.5 CPE)	-Dr. Surendra Dwivedi Assoc Professor, Mechanical Engineering Univ. North Carolina-Charlotte (Arriving WSU May 1, 1985)
Coordinator Artificial Intelligence	-Search underway

\*National Search for permanent Director underway. Closing date for applications February 15, 1985. Search Committee Chaired by Dr. Lloyd Benningfield, Dean of the Graduate School, and includes two manufacturing industry representatives.

## ACCOMPLISHMENTS TO DATE

### GENERAL

- Carried out two extensive mailings to industry to introduce Center.
- Held meeting for industry representatives to seek indication of needs from Center.
- Conducted extensive mail survey to seek indication of industry needs from Center.
- Having increasing interaction with College of Business, Small Business Development Center.
- Providing assistance to individuals seeking technical support for development of new products.
- Providing assistance to small companies seeking technical support for development of new products.

### CAD/CAM

- Installed microcomputer based CASCADE CAD system.
- Negotiated grant for CADAM software system and installed at WSU.
- Sought bids for 4 professional level CAD/CAM work stations to be purchased Spring 1985. Presently Center has 3 stations on loan for evaluation.
- Negotiating with Dussault in France for CATIA software through University grant program. This is three dimensional package to complement CADAM.
- Industry Seminar "Flexible Manufacturing Systems" presented Fall semester 1984.
- Industry Seminar "CAD/CAM", scheduled March 15, 1985.
- Industry Seminar "Designing for Manufacturability", scheduled April, 1985.
- 10-12 Short Industry Orientation Sessions on CADAM Software presented to date. Will continue.
- Planning 40 hr. Industry Training Session on CADAM software to be scheduled Fall 1985.

- 10-12 Short Orientation Sessions on CADAM software presented to date to faculty members and students. Will continue.
- Demonstrations on CASCADE microcomputer based CAD system for all students in IE 213 during Fall semester 1984. This will continue each semester.
- Have developed significant interactions with Cessna Aircraft CAD/CAM Group.
- Demonstrations on CASCADE microcomputer based CAD system for graduate students in Industrial Education during Fall semester 1984. This will continue.

### ROBOTICS

- Secured one educational robot.
- Seeking to purchase an industrial robot during next 6 months.
- Presented Industry Seminar, "Introduction to Robotics", Fall semester 1984.

### ARTIFICIAL INTELLIGENCE

- Secured symbolics computer for Computer Science Department.
- Supporting factory training for CS faculty member on symbolics computer.
- Two new faculty members with expertise in artificial intelligence hired for 1984-85 academic year.
- Have proposals before Boeing for research work in AI to begin Spring semester 1985.

### COMPOSITE MATERIALS

- Beginning steps have been taken to develop Composite Materials Laboratory. Testing facilities have been established and certified by the Boeing Military Airplane Company for composite material testing in accordance with BSM 8-212. This capability assures being approved to do material testing for any manufacturers of composite parts.
- Taught graduate course AE 753 "Mechanics of Fiber Composites", Fall semester 1984.
- Three aeronautical engineering graduate students with research emphasis on composite materials will graduate May 1985.



- ° Five papers dealing with research results for studies related to composites will be presented at national conferences during 1984-85.
- ° Development and presentation of two specialized in-plant courses in composite material technology for Boeing Military Airplane Company during 1984-85.
- ° Funding received for four research projects involving four faculty members and dealing with various aspects of composite materials to be carried out during 1984-85 (Funding from NASA, Kansas Advanced Technology Program, Boeing Military Airplane Company and Precision Composites).

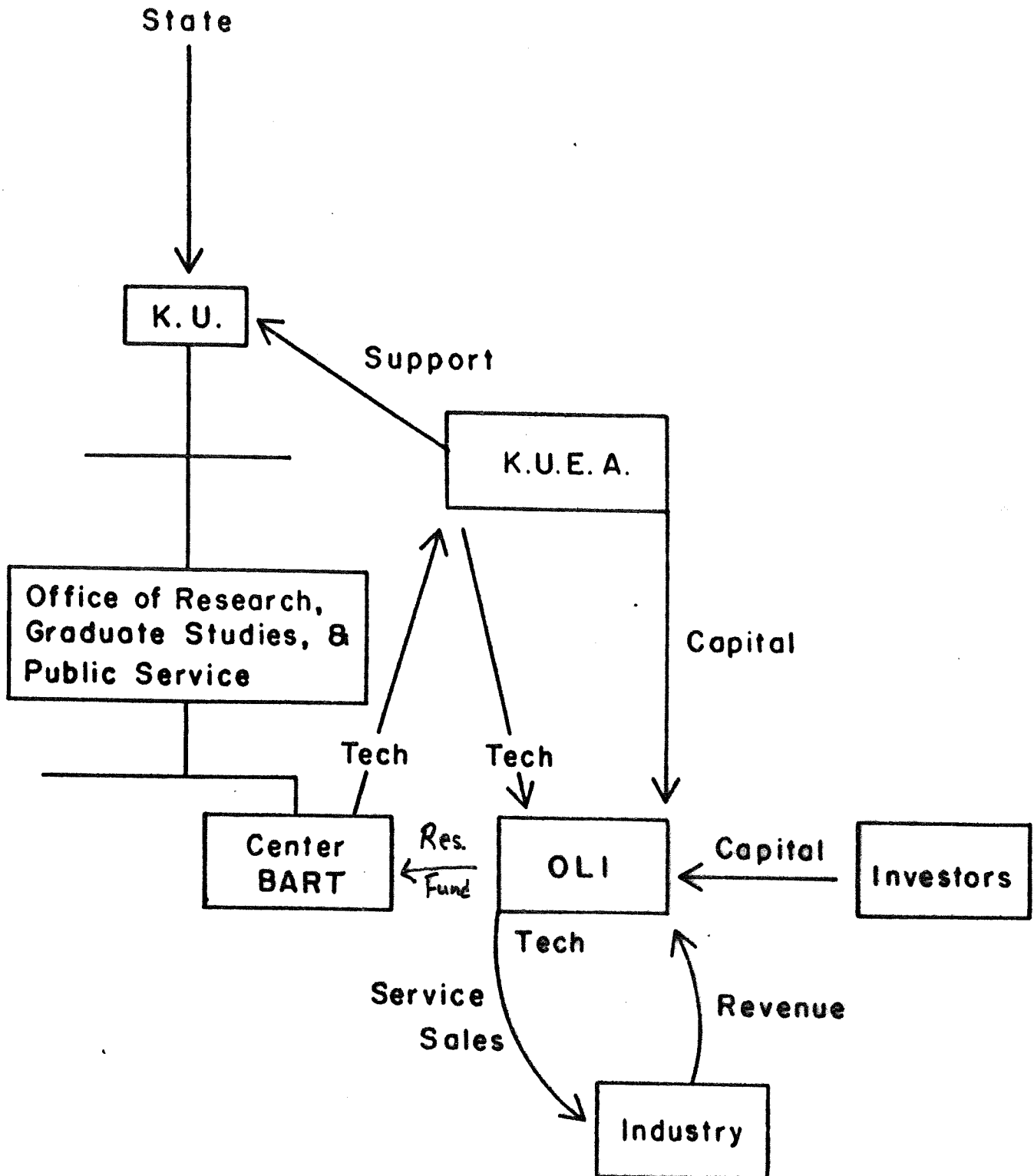
GOALS OF THE CENTER PROGRAM AT K. U.

- I. Create a new high technology research center of international stature within K. U.
- II. Create a viable new high technology industry in Kansas which can provide employment for a substantial number of technically trained people and which can add significantly to the economic base of the State.
- III. Create a substantial additional financial asset for K. U. E. A. for the benefit of K. U.

(Attachment 2)  
1/28/85

TABLE I  
EXAMPLES OF HI-TECH

PERIOD	POLYMER FIELD	PHARMACEUTICALS	ELECTRONIC
1930's	RAYON, NYLON	SULFAS	RADIO, VAC. TUBES
1940's	POLYESTERS, POLYOLEFINS	NATURAL PENICILLINS	MICROWAVE, KLYSTRON
1950's	POLYACRYLATES	ANTIBIOTICS, PHENOTHIOZINES, STERIODS	BW TV, TRANSISTORS COMPUTERS
1960's		SEMI-SYNTHETIC ANTIBIOTICS, TRANQUILLIZERS	MAGNETIC MEMORY, MICROELECTRONIC, COMPUTERS
1970's		CARDIOVASCULAR AGENTS	MICROCHIPS, COMPUTER HARDWARE
1980's		BIOTECH, DRUG DELIVERY SYSTEMS, POLYPEPTIDES	COMPUTER SOFTWARE, A.I., ROBOTICS



## OREAD'S PROJECTED COMMERCIAL ACTIVITIES

Oread Labs, Inc. will offer bioanalytical services based on the state-of-the-art analytical technology utilizing proprietary methodology to pharmaceutical and biotechnology companies. Approximately 10% of the costs of developing a new drug are analytical costs. Billions of dollars are being spent worldwide in new drug development. There are no significant regulatory barriers in this field.

OREAD LABORATORIES, Inc.

BOARD OF DIRECTORS

Dr. Takeru Higuchi  
Regents Professor  
Pharmaceutical Chemistry  
The University of Kansas  
Lawrence, KS

Dr. Howard E. Mossberg  
Dean  
School of Pharmacy  
The University of Kansas  
Lawrence, KS

Chancellor Gene A. Budig  
The University of Kansas  
Lawrence, KS

Mr. Todd Seymour  
President  
KU Endowment Association  
The University of Kansas  
Lawrence, KS

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Retired Chairman  
Kansas Power & Light  
Topeka, KS

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President  
Martin Tractor Co.  
Topeka, KS

Mr. George Nettels, Jr.  
President  
McNally Pittsburg Co.  
Pittsburg, KS

Mr. Olin K. Petefish  
Attorney  
Petefish Curran & Immel  
Lawrence, KS

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Chairman and Chief Executive Officer  
Riss International Corporation  
Kansas City, MO

Mr. L. H. Ruppenthal  
Attorney  
McPherson, KS

Mr. Dolph Simons, Sr.  
Chairman of the Board  
Journal-World  
Lawrence, KS

Mr. John T. Stewart, III  
President  
Plessey Aero Precision Corporation  
Wellington, KS

Mr. Ken Wagon  
President and Chairman  
Capital Management Co.  
Wichita, KS

Executive Committee

Dr. Takeru Higuchi  
Mr. Olin K. Petefish  
Mr. Robert B. Riss  
Mr. Todd Seymour  
Mr. John T. Stewart, III

CALENDAR OF EVENTS CONCERNING  
OREAD LABORATORIES, INC.

October 1983	Center for Bioanalytical Research organized at KU
November 1983	Oread Laboratories organized. K. U. E. A. fund \$750K
December 1983	Research agreement signed by KU, K. U. E. A. and Oread
January 1984	Center research funded by Oread (\$195K) and State (\$130K)
April 1984	Addition to the Center budget by Oread (\$114K)
August 1984	Oread agrees to fund Center additional amount (\$80K) and the State (\$160K)
October 1984	Oread agrees to fund Center additional amount (\$90K) and the State (\$60K)
October 1984	First full-time Oread employee, Dr. Wong, hired
December 1984	Second employee, Ms. Schlappi, hired

February 1985	Scientific advisory board formed
March 1985	Completion of business plan expected
May 1985	Commercial operation started
June 1985	Equity sale planned. 900,000 shares to be offered to Kansas residents. Minimum purchase of 12,500 shares at \$4/share
July 1985	Building plan initiated. IRB for \$1.65M to be sought
August 1985	Architect selected
January 1986	Building bids invited
July 1986	Building completed
1989	Second equity offering made



# OREAD LABORATORIES, Inc.

## SCIENTIFIC ADVISORY BOARD

Lester Chafetz, Ph.D.  
President  
Chafetz Associates  
Murray Hill, NJ

Carl R. Rehm, Ph.D.  
Division Director  
Pharmaceutics R & D  
Revlon Health Care  
Tuckahoe, NY

Aaron D. Cooper, Ph.D.  
Director  
Quality Assurance  
Vick Research Center  
Shelton, CT

Larry A. Sternson, Ph.D.  
Director  
Pharmaceutical Research and Technology  
Smith Kline & French Laboratories  
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Klaus G. Florey, Ph.D.  
Senior Scientific Advisor  
E.R. Squibb and Sons  
New Brunswick, NJ

Anthony J. Taraszka, Ph.D.  
Vice President  
Pharmaceutical Control  
The Upjohn Company  
Kalamazoo, MI

Joseph A. Mollica, Jr., Ph.D.  
Senior Vice President  
Drug Development  
Pharmaceutical Division  
Ciba Geigy Corporation  
Summit, NJ

Hal Wolkoff, Ph.D.  
Senior Vice President  
Development Operation  
Schering-Plough Corporation  
Bloomfield, NJ

Gerald J. Papariello, Ph.D.  
Assistant Vice President  
R & D Department  
Wyeth Laboratories Division  
Philadelphia, PA

# OREAD LABORATORIES, Inc.

## OREAD BUILDING PLAN

(Stage I)

January 27, 1985  
T. Higuchi

Estimated Cost (including land)	\$1.65 million
Location	Lawrence Research Park on approximately 4 acres of ground
Building Size	Approximately 15,000 square feet
Calendar:	February, 1985      Land option
	July, 1985            IRB decision
	November, 1985     Architect selected
	January, 1986       Plans approved Bids invited
	March, 1986         Building started
	July, 1986           Building completed

USE OF RAISED CAPITAL

Expected Cash Balance August 1, 1985	\$ 3,650,000
Effective Phase I Building Cost (IRB used)	1,525,000
Cash Flow Deficit 1985-1986 Outflow \$865,000 less Inflow \$500,000	365,000
Cash Flow Deficit 1986-1987 Outflow \$1,215,000 less Inflow \$930,000	285,000
Cash Flow Deficit 1987-1988	225,000
	<hr/>
Total Cash Requirement to July 1988	\$ 2,315,000
Estimated Remaining Resources July 1988	\$ 1,260,000

PROJECTED SOURCES OF OREAD'S FUTURE REVENUE

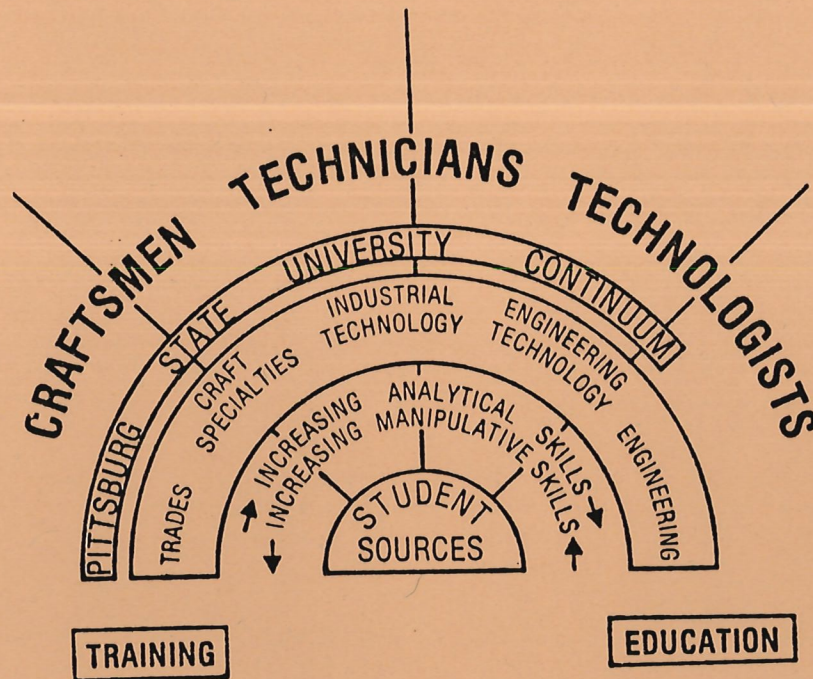
Oread intends to obtain its revenues primarily from two sources. Its major income production will come from its analytical service activities. Its secondary revenue production is expected to come from licensing of its analytical technology to users in the field of medicine and biotechnology.

Analytical services, in turn, are expected to be of two types: (1) laboratory analysis of samples provided by the client and (2) analytical research service in developing specialized methodology for the client. In both instances, the technology basic to the service provided will be primarily of proprietary nature, thus assuring relatively profitable fee structure. Projected income for these activities is shown in Table I.

TABLE I

Income Projections for Oread Activities  
for Fiscal Year Ending June 30, 1985 (in thousands)

<u>Type of Activity</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Revenue from Analysis of Client Samples	0	150	750	1,800	3,200	4,800
Revenue from Analytical Research Service	0	25	50	100	200	400
Licensing of Technology	0	0	50	200	400	600
	<u>0</u>	<u>175</u>	<u>850</u>	<u>2,100</u>	<u>3,800</u>	<u>5,800</u>



## TECHNOLOGY CONTINUUM

### INDUSTRIAL TECHNOLOGY

Industrial Technology is the management oriented technical area built upon a knowledge of materials, production processes, principles of distribution and concepts of industrial management and human relations. Required is a proficiency in communication skills, applied physical science, manufacturing skills, basic management skills and mathematics through algebra and trigonometry. Graduates are most likely to aspire to a position in industrial supervision or production management.

### ENGINEERING TECHNOLOGY

Engineering Technology is the area of the industrial structure in which a knowledge of scientific and engineering principles are used in support of engineering activities. The engineering technologist works to apply these principles to the problems and products of industry. It is characterized as including mathematics through differential and integral calculus, applied science and technology courses which emphasize the application of technical knowledge and methods to the problems found in industry. Graduates are most likely to aspire to positions in operations, product design, product development and technical sales and service.

### ENGINEERING

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgement to develop ways to utilize economically the materials and forces of nature for the benefit of the human race. It includes research, design, manufacturing, operations, construction, administration, testing, servicing and sales. Baccalaureate engineering programs are characterized as including advanced mathematics through differential equations, basic physical science and engineering science courses. Graduates are most likely to aspire to a position in research, conceptual design or systems engineering.

( Attachment 3 ) 1/28/85



# Pittsburg State University

School of Technology and Applied Science  
Pittsburg, Kansas 66762 / (316)231-7000, Ext. 448

December 11, 1984

Mr. Jerry Bergen  
Kansas Board of Regents  
Merchants National Tower Suite 1416  
Topeka KS 66612

Dear Jerry:

I am writing this letter in response to your request on October 31, 1984. The following programs are certificate programs in the Vocational Technical Institute:

#### Day-Trade Programs:

1. Air Conditioning and Refrigeration (47.0201)
2. Auto Body Repair (47.0603)
3. Auto Mechanics (47.0604)
4. Cabinet and Furniture Making (48.0799)
5. Cosmetology (12.0403)
6. Drafting Technology (48.0199)
7. Electricity (46.0302)
8. Electronics (47.0103)
9. Machine Shop Technology (48.0503)
10. Welding (48.0504)

#### Adult Vocational Programs:

1. Airconditioning and Refrigeration (47.0201)
2. Electronics (47.0103)
3. Electricity (46.0302)
4. Welding (48.0504)
5. Geriatric Nurse Aide (17.0601)
6. Medication Aide (17.0699)
7. Medication Aide Recertification (17.0699)

The following listing identifies the associate degree in applied science programs in the School of Technology and Applied Science:

1. Automotive Technology/Service (06.2001)
2. Wood Technology (06.2001)
3. Printing Production (50.0801)
4. Architectural Drafting (15.0101)
5. Industrial Electronics (15.0303)

*(Attachment 4)*  
*1/28/85*

The next listing identifies the baccalaureate degree programs in the School of Technology and Applied Science:

Bachelor of Science in Education

1. \*Industrial Arts Education: Middle School and Secondary School Teaching (13.1309).
2. \*Industrial Arts Education: Secondary and Post Secondary Teaching (13.1309).
3. Industrial Arts Education: Secondary School Teaching with Minor (13.1309).

\* These two programs are being recommended to be combined as a part of the Spring 1985 Regents' Review.

Bachelor of Science in Engineering Technology

4. Construction Engineering Technology (15.0101)
5. Electronics Engineering Technology (15.0303)
6. Manufacturing Engineering Technology (15.0604)
7. Mechanical Engineering Technology (15.0805)
8. Plastics Engineering Technology (15.0607)

Bachelor of Science in Technology

9. Automotive Technology: Agricultural Machinery and Heavy Equipment (06.2001)
10. Automotive Technology: Manufacturing Management (06.2001)
11. Automotive Technology: Service Management (06.2001)
12. Construction Management (06.2001)
13. Industrial Administration (06.2001)
14. Commercial Graphics (50.0402)
15. Printing Management (06.2001)
16. Printing Technology (50.0801)
17. Wood Technology (06.2001)

Bachelor of Science in Vocational Technical Education

18. Vocational Technical Education: Health Occupations and Technical Education (13.1399)
19. Vocational Technical Education: Industrial (13.1320)

The following master's degrees are offered through the School of Technology and Applied Science:

1. Master of Science, with a Major in Industrial Arts Education (13.1309)
2. Master of Science with a Major in Technology (15.9999) & (06.2001)
3. Master of Science with a Major in Vocational Education (13.1320)
4. Master of Science with a Major in Technical Teacher Education (13.1319).

The following specialist degree is offered through the School of Technology and Applied Science:

1. Specialist in Education with a Major in Industrial Education (13.1309) & 13.1320).

The vast majority of these programs have already been through the Regents' Review proces. We will complete the review of the entire school this year when the following programs are reviewed:

- Bachelor's degrees 1, 2, 3, 18, 19
- Master's degrees 1, 3, 4
- Specialist in Education 1

I hope I have answered your questions about our programs. If not, please feel free to contact me.

Sincerely,

David McFarland, Dean  
School of Technology and  
Applied Science

dm

cc: Vice President James Gilbert



AMEND CAPITAL IMPROVEMENT LEGISLATIVE REQUEST

APPROVED BY BOARD OF REGENTS AND PROPOSED TO BUDGET OFFICE  
AND LEGISLATURE

Pittsburg State University has been engaged in a very serious and detailed review of priorities and future directions for the University within a comprehensive planning process since the inauguration of a new University President in 1984.

One of the major decisions made in the Fall of 1984 was to merge the School of Technology and Applied Science and the Vocational Technical Institute to provide a unified continuum from non-degree job training programs of a short term (one and two-year duration) through Bachelor's and Master's in Technology degrees. Students entering the non-degree job training programs will have defined opportunities for continuing their education under reorganization. Other major benefits include more effective and efficient use of facilities, faculty and staff and equipment. The University needs these complementary, yet diverse, programs as a part of a coordinated whole contributing to the economic and industrial development of the state of Kansas by training and educating students in appropriate technology. Pittsburg State University is the only university in the state of Kansas offering such programs at the Bachelor's and Master's degree level. In many areas of technology Pittsburg State University academic programs are nationally and internationally recognized (as evidenced in one case by the establishment of the National Technical Training Center for the Architectural Woodwork Institute (AWI) at the University). This Center will train individuals from the 750 participating companies that make up AWI across the United States. This Center will bring up to \$2 million of the most up-to-date woodworking equipment to the University in addition to national and international recognition.

(Attachment 5)  
1/28/85

It is imperative to reinforce this unified program in a meaningful way, not only recognizing budgetary limitations but also the potential for excellence and service. The facilities that will be shared by the merged programs include the Temporary Science Annex, Whitesitt Hall and Hartman Hall. There have been limitations in past years to program growth in a variety of key academic areas in technology because of a lack of space or inappropriate space. By utilizing all of the space available in a way that allows for the relocation from one area to another, program needs can be met without the construction of additional square footage. This is vital in certain academic programs as we face Accreditation Board for Engineering Technology accreditation visits that will mandate improved or additional space. Present constraints include the need to move the Department of Art out of Whitesitt Hall into a renovated Porter Hall.

#### Specific Recommendation

To accomplish this crucial reorganization and facility utilization, it is imperative to accomplish the renovation of existing space in the Temporary Science Annex, Hartman Hall, Whitesitt Hall and Porter Hall.

The Board of Regents has recommended two major renovation projects for Pittsburg State University to the Kansas State Legislature:

- |                                |                     |
|--------------------------------|---------------------|
| 1. Temporary Science Annex/VTI | \$538,000 (FY 1986) |
| 2. Porter Hall                 | \$500,000 (FY 1987) |

Because of the merger of the School of Technology and Applied Science and the Vocational Technical Institute, it is proposed that approval be sought to utilize the \$538,000 (minus \$6,500 not now required for moving expense) within the same time period to emphasize the needs of the combined areas versus the narrow area of the Vocational Technical Institute that was originally proposed.

If approved, the \$531,500 would be used to accomplish the following.

A. Temporary Science Annex

Provide space for the Architectural Woodworking Institute (AWI) skill level training and Wood Technology programs (undergraduate and graduate). Space for approximately \$2,000,000 of Wood Technology equipment to be donated by AWI.

1. General Remodeling			
a. Wood Technology	9,960 S.F. @	\$4.00 =	\$40,000
b. Cosmetology	5,520 S.F. @	6.00 =	33,000
2. HVAC Modifications	15,500 S.F. @	2.00 =	31,000
3. Plumbing Modifications			
a. Wood Technology	9,960 S.F. @	0.50 =	5,000
b. Cosmetology	5,540 S.F. @	1.50 =	9,000
4. Electrical Modifications			
a. Wood Technology	9,960 S.F. @	8.50 =	85,000
b. Cosmetology	5,540 S.F. @	1.00 =	<u>6,000</u>

\$209,000

B. Whitesitt Hall

Modify the space used by Wood Technology on the first floor for the Plastics Engineering Technology program, for the Printing Department and for the materials lab of the Mechanical Engineering Technology program.

Modify some of the existing printing space on the first floor for use by the Industrial Arts and Technology's program of Industrial Education and some for use by the Engineering Technology's program of Manufacturing Engineering Technology and the two-year Machine Shop program.

On the second floor, the space that will eventually be vacated by the Art Department will be partially utilized by the Electronics Engineering Technology program of the Engineering Technology Department and some by the Printing Department.

On the third floor, space vacated by the Plastics Engineering Technology program will be modified for use by the Printing Department that will be moved from the first floor.

1. General Remodeling	16,500 S.F. @	2.00 =	\$33,000
2. Electrical	16,500 S.F. @	3.50 =	62,000
3. Mechanical			<u>--</u>

95,000

C. Hartman Hall

Electronics will be moved to Whitesitt and housed with the Electronics Engineering Technology's program.

Geology will be moved out of Hartman.

VTI Drafting will move from Hartman to Russ and incorporated with the Department of Engineering Technology's Mechanical Engineering Technology program.

Heating, Air Conditioning and Refrigeration will be moved from the Science Annex and the basement of Kelce Center to Hartman Hall. They will move into the space that has already been vacated by Cosmetology and that space vacated by Drafting, Geology and Electronics.

1. General Remodeling	8,200 S.F. @ 2.00 =	\$17,000	
	(approx.)		
2. Electrical	8,200 S.F. @ 3.50 =	29,000	
	(approx.)		
3. Mechanical		--	
			<u>46,000</u>
			\$350,000
<b>D. <u>Estimated Cost Other Than Construction</u></b>			
Architects' Fee		\$38,500*	
Printing, Freight & Travel		1,000	
Surveys, Soil Borings and Testing		--	
Resident Inspection		1,200	
Movable Equipment (see attached list)		65,800	
Landscaping		--	
Project Contingent		<u>30,000</u>	
			<u>136,500</u>
Sub-Total - Appropriation Request			\$486,500
<b>E. <u>Porter Hall Planning</u></b>			<u>45,000</u>
Because of the pressing need for space for the School of Technology and Applied Science in Whitesitt Hall, it is urgent that the Department of Art be moved from that building to the Porter building. Based on the student weekly credit hours and the Regents' guidelines, the School of Technology and Applied Science is seriously deficient in net assignable square feet for its programs. Moving the Department of Art from Whitesitt hall will help remedy the problems faced in the School of Technology and Applied Science.			
TOTAL REQUEST			<u>\$531,500</u>

\*Calculated on construction cost of \$350,000 and a maximum allowable fee of 11%.

MOVEABLE EQUIPMENT FOR REFRIGERATION LAB USE

<u>Qty.</u>	<u>Description</u>	<u>Approx. Cost</u>
20	1/6 hp 115V condensing units	\$ 3,330.00
20	Evaporators for above units	1,560.00
20	1/2 hp 115V condensing units	8,500.00
20	Evaporators, fan forced for above units	2,300.00
2	Scottsman cuber icemaker 140 lbs.	2,800.00
1	Crystal tip model C-012-10	<u>1,730.00</u>
	Sub-total	\$20,190.00
	TOTAL	\$65,800.00

AIR CONDITIONING EQUIPMENT & LAB FURNITURE

<u>Qty.</u>	<u>Description</u>	<u>Approx. Cost</u>
<u>Furnace Lab</u>		
2	25 KW Electric furnace with A coil	\$ 1,100.00
2	Gas upflow furnace 80,000 Btuh with A coil	1,150.00
2	Gas fired heating & cooling combination units 2 ton/60,000 Btuh	4,000.00
2	Heatpump, split system 2-3 ton	3,000.00
2	Heatpump, packaged system 2-3 ton with 15 KW electric heat	3,500.00
1	Amana HTM +1 heating & cooling system	2,000.00
1	York high efficiency furnace 80,000 Btuh	1,050.00
1	Coleman high efficiency furnace 80,000 Btuh	1,050.00
1	100,000-135,000 Low pressure boiler with pump (gas fired)	<u>2,000.00</u>
		\$18,850.00
<u>Commercial Units</u>		
3	Roof top units (light commercial) 2 stage heat (2 gas & 1 electric) energy saver or economizer gas - power saver burner 3 phase units - 230 - 3 - Ø	\$ 9,000.00
6	2 - 4 Ton condensing units 230 V 1 Ø	4,500.00
1	15 Ton split system air conditioner with capacity control, 3 phase motor with part start winding	7,000.00
1	Chiller 5 ton 3 phase	<u>2,000.00</u>
		\$22,500.00
<u>General Lab</u>		
12	3' x 8' Benches w/storage	\$ 3,000.00
12	Bench stools	240.00
12	Medium duty mechanics vise	600.00
6	Heavy duty service carts, 36"	<u>420.00</u>
		\$ 4,260.00

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