



**STATE OF MICHIGAN
MICHIGAN ECONOMIC DEVELOPMENT CORPORATION (MEDC)
MICHIGAN LIFE SCIENCES CORRIDOR (MLSC)**

**THE MICHIGAN LIFE SCIENCES CORRIDOR (MLSC) FUND
FISCAL YEAR 2002 COMPETITION**

**CATEGORY I: BASIC RESEARCH FUND
PROPOSALS RECOMMENDED FOR FULL FUNDING**

MEDC ID#: 27
Title: Michigan Diabetes Research Consortium
MLSC Proposal Funding Category: Cat I
Program Director Name: Granneman, James
Applicant Organization: Wayne State University School of Medicine

ABSTRACT:

Almost 20 million Americans are afflicted with diabetes, including up to 20% of the US population over age 65. Astoundingly, Michigan ranks fourth nationally in the incidence of diabetes, with direct costs to the State in excess of \$5B per year and untold human costs. Unfortunately, although progress has been made in the treatment of this debilitating disease, most therapies are woefully inadequate, can sometimes accelerate its progression, and do not attack the underlying pathophysiology. The development of type 2 diabetes involves complex interactions among tissues, cells and signaling pathways. Understanding the relevance of different pathways and their interactions will require the development of novel genetic animal models and the application of sophisticated functional genomic, proteomic and metabolic analyses to these models. In spite of the clear value of such studies, their execution is well beyond current capabilities under established organizational and funding structures, but will require a comprehensive, multidisciplinary approach among dedicated investigators. This proposal focuses on a new solution to this problem through the creation of the Michigan Diabetes Research Consortium (MDRC). The MLSC provides a unique opportunity for Michigan researchers and institutions to coordinate and integrate diabetes research in the state, and greatly leverage Federal, State and private resources. The MDRC will develop a discovery infrastructure that includes basic research, drug target discovery and validation, and technology development. The long-term goal of the Consortium is to elucidate the causes of diabetes and discover potential mechanisms for therapeutic intervention. Moreover, the unique combination of industry and academic experience of the MDRC Principal Investigators will serve as a catalyst for biotechnology and economic development in Michigan in the area of metabolic diseases.

MEDC ID#: 38
Title: A genetic screen for mutations affecting CNS development and regeneration

MLSC Proposal Funding

Category: Cat I
Program Director Name: Goldman, Daniel
Applicant Organization: The Regents of the University of Michigan

ABSTRACT:

Our brain has the potential to shape and repair itself; it is changing constantly as a result of development, experience, disease and aging. However, the magnitude of change in the adult brain is quite small compared to that seen during early development. If we understood the mechanisms underlying the plasticity of the developing nervous system we may be able to harness this plasticity to improve the damaged or diseased adult nervous system. We suggest that a key to understanding this plasticity will require the identification of genes whose expression is essential to normal CNS development and repair. To identify these genes we propose to mutagenize transgenic zebrafish harboring an easily detected reporter gene, encoding green fluorescent protein (GFP), that is controlled by the neural-specific $\alpha 1$ tubulin promoter. This promoter is activated in neural precursors, and developing and regenerating neurons; therefore the exact cells that we need to target for identifying mechanisms of adaptation and repair. The F3 generation from mutagenized transgenic fish will be screened for mutations affecting GFP expression. Mutant genes will then be mapped, cloned and their expression and function characterized. Although our focus is on CNS development and regeneration, the mutant fish we generate can be screened for defects in many neural and non-neural systems and will likely be useful to many researchers in Michigan and nearby areas. Indeed we already have generated interest in these fish by Michigan investigators studying eye development, stem cells, olfaction, motor control of body movement, learning and memory, myeloid development and development of the pancreas. It is clear that these fish will be a great asset for scientists interested in using a mutant screen to discover genes underlying a particular process. Because of the effort necessary to generate these fish and the value they have to the scientific community, it makes sense to share these fish so others can benefit from this resource without duplicating the effort in generating it.

MEDC ID#: 179
Title: Improving Muscle Power and Mobility of Elderly Men and Women

MLSC Proposal Funding

Category: Cat I
Program Director Name: Carlson, Bruce
Applicant Organization: The Regents of the University of Michigan

ABSTRACT:

A group of 6 scientists, all experienced in the study of the biology of aging muscle and mobility, proposes a multilevel program with the long-term goal of improving muscle power and mobility in the elderly. Broad aims of the project are: 1) to develop new portable devices for measuring muscle power; 2) to coalesce a multidisciplinary aggregate of researchers on problems of muscle power and mobility in the elderly into a unit that is nationally recognized as a center for such research; 3) to conduct research on the development of novel training programs and technologies designed to increase muscle power in the elderly; 4) to create an environment for effective technology transfer between academic scientists and commercial product engineers; and 5) to utilize the expertise and resources of a collaborative group of scientists to leverage incremental funding and additional personnel (both qualified scientists and trainees) in this area. The research project involves both young and elderly human subjects and a multilevel comparison of the effects of a progressive resistance training program on muscle power and mobility. The effects of a "thermal glove" device that is designed to improve the efficiency of muscle training programs by regulating body core temperature will be tested on a second group of young subjects. If the thermal glove proves to be safe and effective, a subsequent study will be conducted on elderly subjects. Evaluation will be performed at levels from whole body mobility and power to single muscle fiber mechanics, biochemistry and morphology. The participating investigators and associated core facilities are already well equipped to undertake the research. The program unites key facilities and efforts in a number of academic units within the University of Michigan, as well as a for-profit Michigan firm. Such consolidation will lead to the creation of an identified Center for Musculoskeletal Aging in Michigan, which will serve as a base for attracting major funding and collaborations with other corporate entities.

MEDC ID#: 277
Title: Developing Met-directed strategies for imaging and treating metastatic prostate cancer

MLSC Proposal Funding

Category: Cat I
Program Director Name: Vande Woude, George
Applicant Organization: Van Andel Research Institute

ABSTRACT:

Inappropriate expression of Met, a receptor tyrosine kinase, is correlated with poor prognosis in a wide range of human solid tumors. We have recently demonstrated that Met is highly expressed in all human prostate cancer metastases, yet only in about 2/3 of primary carcinomas. We have available two classes of Met-directed agents that show promise in other systems: monoclonal antibodies reactive against components of the human Met-HGF/SF receptor-ligand complex, and novel derivatives of geldanamycin that exhibit exquisite antagonism toward Met and Met-triggered oncogenic mechanisms. We hypothesize that one or both might be effective in the clinical evaluation and/or treatment of metastatic prostate cancer. We propose to evaluate the effects of these agents in Met-expressing cultured human and dog prostate cancer cell lines, to extend those observations to in vivo testing in mice bearing human prostate cancer xenografts, and to judge the potential suitability of these agents for clinical use by testing them in the setting of spontaneously occurring metastatic prostate cancer in dogs. We have assembled a multidisciplinary team of collaborating investigators with expertise in synthetic organic chemistry, molecular biology, pathology, immunology, nuclear medicine, and comparative oncology. They represent three institutions in Michigan (Van Andel Research Institute, Michigan State University, and the Department of Veterans Affairs Medical Center/University of Michigan) and two institutions outside Michigan (Weill Medical College of Cornell University, New York; Gerald P. Murphy Cancer Foundation, Washington). We will use our combined expertise and resources to apply our recently developed Met-related diagnostic and therapeutic agents to combat prostate cancer metastases. The need for new treatments for metastatic prostate cancer in Michigan and nationwide is great, and the economic potential in terms both of reduced morbidity and mortality and for attracting future commercial development of effective agents is substantial. Based on our in vivo evidence that Met is overexpressed in all prostate cancer metastases, the Met receptor tyrosine kinase could become a promising novel target for the detection and treatment of metastatic prostate cancer, similar to the way that Her2/Neu has evolved as a target in metastatic breast cancer.

**CATEGORY II: COLLABORATIVE APPLIED RESEARCH
AND DEVELOPMENT FUND
PROPOSALS RECOMMENDED FOR FULL FUNDING**

MEDC ID#: 233
Title: Discovery of Therapeutic Targets for Bone Disease
MLSC Proposal Funding Category: Cat II
Program Director Name: Long, Michael
Applicant Organization: Osteomics, Inc.

ABSTRACT:

The long-term goals of this proposal are to discover therapeutic targets for Osteoporosis and other bone disorders. Osteomics, Inc. focuses on discovering therapeutic targets and developing drugs that stimulate bone formation as treatments for bone disorders, and bone-related injuries. This MLSC application seeks to build the physical and scientific infrastructure needed to identify and validate new and novel therapeutic modalities that stimulate bone formation in osteoporotic individuals. Funds are sought to cover project-related equipment/supply expenses, human resources, and support of our academic collaborators. This will allow Osteomics to build on its current technology - the ability to rapidly isolate and analyze human bone cells, and to grow human bone outside the body. MLSC funding of this program will increase the employment of individuals in the high-technology sector, facilitate the recruitment of highly skilled individuals to Michigan, and allow us to train local personnel to increase their skill sets. Moreover, MLSC funds will be leveraged into further federal and equity-based investments; the latter serving to expose investors to Michigan as an important investment location. A critical aspect of our endeavors is the inclusion of our academic collaborators in The University of Michigan's Bioinformatics Program, and in its Orthopedic Research Laboratories. This collaborative effort underscores Osteomics' commitment to its state-of-the-art, engineering and computer based therapeutic discovery program. Together, Osteomics, and the University will address the critical need for bone therapies that accelerate and/or enhance bone formation, with Osteomics providing the therapeutic-analysis, cellular and molecular biological expertise, and our university collaborators providing the, bioengineering, computational, and bioinformatic solutions needed for rapid discovery. The project design has four important components: examination of the impact of combined growth factor application on normal and osteoporotic human bone cells, identifying the effects of biomechanical stimulation on these cells, delineation of changes in gene function during bone formation, and validation of therapeutic targets in in vivo assays. The successful accomplishment of the milestones in this MLSC proposal then culminates in Drug Discovery studies aimed at novel ways of stimulating bone formation.

MEDC ID#: 238
Title: Proteomics Alliance for Cancer
MLSC Proposal Funding Category: Cat II
Program Director Name: Omenn, Gilbert
Applicant Organization: University of Michigan Medical School

ABSTRACT:

The Proteomics Alliance for Cancer (PAC) is a new Michigan-based initiative formulated by the University of Michigan in conjunction with the Van Andel Institute, Pfizer Global R&D, and several other companies. The PAC plans to build and profile an oncology sample bank to produce a large centralized gene/protein database from which researchers can derive new hypotheses and initiate multidisciplinary research collaborations. Critical to the creation of a highly valued sample bank is the linkage of samples to extensive annotation on patient information, tissue pathology, response to therapy and longitudinal outcomes, all in full compliance with HIPAA and IRB requirements and meeting high standards for sample handling and storage. Special emphasis will be placed on serum samples from patients with lung and breast cancer, as well as nipple aspirate fluids from breast cancer patients. Tissue arrays will be created from well-selected, well-characterized tumor and non-tumor specimens. The PAC will work with the MLSC Core Technology Alliance in proteomics, bioinformatics, and animal models and with biotechnology companies to advance the large-scale separation and identification of proteins, to create the gene/protein database, and to conduct proof-of-principle experiments with cell lines, nude mice, and tumor specimens. These collaborations will yield state-of-the-art proteomics technologies, high throughput protein profiling capabilities, and superior data integration and data mining tools. We expect that membership in the PAC will expand to include additional research and business entities. PAC will provide its members opportunities to access the sample bank for specific IRB-approved projects, to use the data to build potentially proprietary tools and products, and to explore the data for novel information that can strengthen their research or business models and client bases. The PAC will contribute new knowledge, some suitable for launching new companies, through development of liquid phase, high-throughput proteomic profiling, creation and evaluation of high-density protein microarrays, proof-of-principle experiments with lung cancer and breast cancer specimens from the PAC specimen bank, and new bioinformatics tools. Oncology is a disease area of high importance to the Corridor, in which exploration of the molecular physiology of cells has already provided substantial new information for research and drug discovery. The PAC will focus initial efforts on two cancer types (lung, breast), while establishing a broad base for future applications.

MEDC ID#: 410
Title: Diagnosis of kidney disease in diabetes and hypertension by fluorescent RT-QPCR

MLSC Proposal Funding

Category: Cat II
Program Director Name: Kurnit, David
Applicant Organization: University of Michigan Medical Center

ABSTRACT:

We have developed a sensitive nephrin RT-QPCR technique to detect abnormal desquamation of renal podocytes into the urine resulting from diabetes, the most common cause of end stage renal disease requiring dialysis or transplantation. Current analyses other than the invasive and expensive technique of renal biopsy are based on the longitudinal measurement of albuminuria, a secondary result of podocyte loss. As a result the assay is not sufficiently sensitive early on because a substantial fraction of podocytes must be lost for albuminuria to occur. Later on in the disease, earlier podocyte loss cannot be repaired so albuminuria is observed regardless of whether further podocyte loss is occurring. In contrast, the nephrin RT-QPCR technique sensitively detects loss of podocytes early in the course of disease. Later on, the test retains the ability to detect podocyte loss regardless of the status of albuminuria. Thus the test can still detect whether drug therapy is working to stem continued podocyte loss. To demonstrate that the assay is useful to monitor diabetics, we will utilize a collection of over 10 longitudinal urine samples taken at intervals from 1400 subjects with diabetes. These frozen urine samples were obtained at roughly yearly intervals for 10 years and then several times over the next decade. We have worked out the methodology to preserve and then detect nephrin transcripts in such frozen specimens. This represents a unique resource that will enable us to collapse a longitudinal study spanning two decades into the MLSC grant spanning three years. As a result, we can evaluate the usefulness of our nephrin RT-QPCR both early and late in the course of diabetes. We would be ready at the end of three year MLSC grant period to begin clinical testing if the anticipated results were obtained. We would also attempt to construct a specialized version of this test to be made available at the bedside for inpatients. If this study confirms the usefulness of the nephrin RT-QPCR assay as indicated by our preliminary results, this will yield a non-invasive and medically useful way to monitor the occurrence and treatment of diabetic nephropathy.

MEDC ID#: 105
Title: NOVEL SYSTEM FOR THE DEVELOPMENT AND PRODUCTION OF THERAPEUTIC ANTIBODIES

MLSC Proposal Funding Category: Cat II
Program Director Name: Motwani, Nalini
Applicant Organization: ApoLife, Inc.

ABSTRACT:

NOVEL SYSTEM FOR THE DEVELOPMENT AND PRODUCTION OF THERAPEUTIC ANTIBODIES

The goal of this proposal is to foster collaboration for the development of an integrated yeast-based system for the production of recombinant antibodies. The market for antibody-based drugs is expected to soar to over \$8 billion in 2004, and ApoLife, Inc. and its collaborators are positioned to take full advantage of this opportunity. ApoLife has developed a cost-effective system for production of recombinant antibodies in yeast. ApoLife's collaborator, Genetastix Corp. has proprietary yeast two-hybrid technology that allows for high-throughput screening and selection of human MAbs. This system only requires target cDNA sequences and not protein therefore it has a great applicability in genomics research. Collaborative efforts between these two companies will provide a means through which antibodies generated with Genetastix technologies can be amplified to small-scale production using ApoLife's yeast system. Genetastix will also provide ApoLife and its partner, Molecular Innovations, Inc., with antibodies to specific targets. Molecular Innovations develops and markets reagents for cardiovascular research including rodent plasminogen activator inhibitor 1 (PAI-1) and PAI-1 antibodies. Clinical evidence implicates elevated PAI-levels in multitude of pathological conditions prevalent in cancer and aging. Thus there is an increasing demand for human PAI-1 and human PAI-1 antibodies from biopharma companies. Therefore the first target antibody to be developed by this collaboration will be human PAI-1 antibody.

The long-term application for this project will be to complement and enhance Michigan's genomic initiative by providing an efficient process to identify multiple targets by genomic research, and translating them into therapeutic applications. Current market for antibody-based drugs is over \$3 billion and it is growing rapidly therefore the success of this project would attract more federal and private funding for these companies.

MEDC ID#: 270
Title: Development of simulation-based computer software environment for designing DNA-based microarrays
MLSC Proposal Funding Category: Cat II
Program Director Name: Hicks, Donald
Applicant Organization: DNA Software, Inc.

ABSTRACT:

The purpose of this proposal is to develop a comprehensive, simulation-based computer software environment for the design of DNA-based microarrays.

The DNA Software Microarray Analysis and Design Studio ("Studio") will apply the Company's previously developed oligonucleotide hybridization modeling platform to the context of the microarray design problem. The Studio will consist of several different tools and algorithms, brought together in an easy to use visual based design suite. This will allow researchers to conduct a number of different "in silico" analyses of interest, including:

- Generation of microarray probe designs (through incorporation of automated design interfaces and optimization routines)
- Simulation of microarray hybridization results at various experimental conditions
- Prediction of existing microarray performance (through incorporation of genomic sequencing data and known microarray design platforms)
- Greatly improved capabilities to conduct expression analysis via a visual based project data management module that will interact with existing microarray database standards, and can be configured to support future in house relational database efforts.

MEDC ID#: 294
Title: Functionally Active Biocompatible Encapsulation (FABE)
MLSC Proposal Funding Category: Cat II
Program Director Name: Auner, Gregory
Applicant Organization: Wayne State University

ABSTRACT:

Implanted biomedical devices have the potential to revolutionize medicine. The engineering improvements we propose for implantable devices could greatly improve the health and vitality of persons in ways previously not possible. Since the outer "cover" (encapsulation) of any implant serves as the interface between the biological host and the internal microsystem of the device, great improvements could be made if the encapsulation matrix contained functional components. Development of this technology, which we have termed "functionally active biocompatible encapsulation" (FABE), is the most critical challenge to producing an effective prosthesis. Our overall hypothesis is that FABE systems can be developed with the synergistic combination of advanced aerospace and biomedical nano- and micro-technology. FABE technology for such implantable microsystems requires advanced technologies, such as laser micro-machining, novel material synthesis, and atomic-layer engineering. Furthermore, the functionality and biocompatibility of the materials and devices must be understood in detail. The proposed program will combine several groups with nationally and internationally recognized expertise to provide "proof of concept" for the encapsulation technologies used for neural stimulation. Specifically, we will: (1) develop new materials for encapsulation, (2) develop processes for engineering surfaces and hermetic sealing of the biocompatible materials, (3) integrate functional modalities into the bioencapsulation material, and (4) assess the biocompatibility and functionality of FABE devices in vivo. This study will uniquely couple the development of advanced biocompatible materials, engineered surfaces by laser and plasma processing, hermetic sealing and surface reconstruction, and functional device structures (electrical effusion systems with wireless telemetry) with extensive in vivo and ex vivo characterization.

The technologies developed within the scope of this program will produce FABE-based prototype devices for Parkinson's disease and other movement disorders. The immediate objective of the proposed program is to develop an efficient FABE-based prototype for neural stimulation and physiological sensing of intracranial pressure and temperature. By concentrating first on the development of fundamental FABE technologies, we will subsequently be able to incorporate these advances into more complex medical devices/implants customized for specific neurological diseases. Thus, a building-block approach will be used to create the necessary business structure to bring these innovative medical devices to the market.

MEDC ID#: 426
Title: Early Stage Biopharmaceuticals Accelerator Fund
MLSC Proposal Funding
Category: Cat II
Program Director Name: Sooch, Mina
Applicant Organization: Apjohn Group LLC

ABSTRACT:

Apjohn Group, LLC is committed to building and investing in early stage biopharmaceutical companies in Michigan. At present, there is a well recognized management and money 'gap' between the innovators and the venture capital (VC) investors. The gap is in large part due to VC expectations before making an investment in companies on minimum milestones such as a core management team, early proof of concept (particularly in-vitro and in-vivo preclinical data), regulatory plan, intellectual property position, and complete business plans with comprehensive market research and financials. These first 12-18 month activities are critical to successful launch and profoundly difficult for innovators developing small molecule drugs, drug / devices, diagnostics, and innovative biological therapeutics (such as gene, antibody or cell therapies) - any product requiring FDA approval. Given the billion dollars of drug-related research from Michigan based corporations and universities coupled with this unmet sector within Michigan Life Sciences, it is Apjohn's vision to realize these wealth creating biopharmaceutical opportunities.

Apjohn is uniquely qualified to provide this early assistance to innovators within Michigan and has even been approached by out of state innovators who are unable to attract such talent to their initiatives. Apjohn, headquartered in Kalamazoo Michigan, is positioned to fully support the early launch of biopharmaceutical companies with over one hundred fifty years of pharmaceutical experience across the Apjohn partners and strong ties with local economic, clinical, academic, angel and VC resources.

Apjohn proposes the establishment of a new bridge financing program to accelerate the launch of two applied research and development stage biopharmaceutical companies in Michigan per year over the next three years. Funds will be used directly to accomplish the commercialization milestones described above including preclinical studies, lab facilities, new scientific hires, IP work, and pharma management talent. Commercial success of these companies backed by Apjohn Group and the State will provide significant economic and scientific benefits to Michigan through technical jobs, use of Michigan based resources and firms for preclinical work, local and national investments into Michigan companies, future corporate earnings tax base, and innovative therapeutics for improved human health.

**CATEGORY III: COMMERCIAL DEVELOPMENT FUND
PROPOSALS RECOMMENDED FOR FULL FUNDING**

MEDC ID#: 77
Title: Life Science Commercialization Consulting Services
MLSC Proposal Funding Category: Cat III
Program Director Name: Kurek, Lisa
Applicant Organization: Biotechnology Business Consultants, LLC

ABSTRACT:

The goal of the Life Science Commercialization Consulting Services Program is to facilitate the establishment of start-up, life science companies in Michigan. The Program integrates four components - training, one-on-one consulting, incubation consulting services, and commercialization grants development - which address identified gaps in commercialization resources in Michigan. The program was initially funded for one year in the first round of the MLSC Fund. This request for continuation funding seeks to build on the demonstrated success of the program over the past 10 months. To date, over 300 entrepreneurs and individuals have received training and consulting assistance. Three companies are participating in the incubation services program. Thirteen SBIR/STTR grants have been submitted to the federal government. The consulting principals of Biotechnology Business Consultants (BBC) have over 50 combined years working in the commercialization of life sciences technology, across a broad spectrum of disciplines. In addition to their expertise, an external consulting team of scientific and business advisors add breadth and depth to these services. The program will expand its partnerships with economic development organizations, incubator programs and venture capital firms. The Program will also expand the commercialization grants development services, with the goal of increasing SBIR funding to Michigan companies by three times the total cost of this program. Over the continuing three year period, the Program will help launch a number of new Michigan life science companies, assist hundreds of entrepreneurs, and increase the amount of commercialization grant funds awarded to Michigan companies, thereby contributing to the achievement of the overall goals of the Life Science Corridor.

MEDC ID#: 97
Title: TGap Ventures
MLSC Proposal Funding
Category: Cat III
Program Director Name: Farner, Peter
Applicant Organization: TGap Ventures

ABSTRACT:

TGap is venture capital firm being formed in Western Michigan. TGap is requesting a \$600K investment from the MLSC Fund. TGap will make early-stage and start-up investments in technology driven growth companies. These investments will include health care providers, medical device, drug delivery and other life science related start-ups.

TGap will leverage (33:1) the MLSC investment with \$20 million in private capital. Additionally, for every \$1 TGap invests in start-ups it is expected that \$2 to \$3 will come from other venture firms within and outside of Michigan.

In addition to collaborating with venture firms, TGap will leverage State and local economic and technology development initiatives. In addition, TGap will collaborate with research hospitals, universities, non-profit research institutions, and private sector entities in identifying opportunities, capital formation, and developing management for emerging life science companies.

The fund's goal is to achieve superior economic return on its invested capital. To do so it will identify, invest in, build and develop, and exit from technology driven start-up companies. The derivative benefits for MLSC will be four fold. First, is the development of new successful life-sciences business within the State. Second, upon accomplishing its mission, TGap will raise additional private capital for future life science related investment. Thirdly, TGap's will further develop Michigan's venture industry, which will compound the venture investment cycle and resulting benefits. Finally, TGap's return to the MLSC Fund of its initial investment plus gains will leverage MLSC's future capital.

TGap's general partners, Jack Ahrens and Pete Farner, have been involved in over 75 growth companies since 1983. They have functioned as lead investor, CEO or senior executive with many of these companies. Over the past 20 years Jack has been involved in successfully investing \$100 million of venture capital and Pete has raised \$50 million. Jack has successfully exited from 37 investments: 23 through IPO's and 14 through private transactions. Pete, while working with emerging growth companies, has negotiated, closed and participated in multi-million dollar consulting, equity participations, and product contracts with more than a dozen Fortune 500 companies, including Anheuser Busch, GE, Compaq, and Proctor & Gamble.

MEDC ID#: 303
Title: Michigan Universities Commercialization Initiative Enrichment
MLSC Proposal Funding Category: Cat III
Program Director Name: Parnes, Marvin
Applicant Organization: The Regents of The University of Michigan

ABSTRACT:

This pre-proposal requests funds that will supplement the activities initiated under the Michigan Universities Commercialization Initiative [MUCI or MUCI 1], funded in Fall 2000 from the MLSC. We believe that further financial support for this commercialization initiative will provide important paybacks to the State of Michigan at all levels of Life Science economic development. Funds are required to 1) more fully implement the dissemination of informational resources and staff expertise within the four partnering institutions, as well as smaller Michigan research institutions at the cusp of commercialization and technology transfer 2) augment the Challenge Fund to enable additional Michigan universities to apply for matching funds 3) provide for the development of a plan for ongoing maintenance and updates.

The Michigan Universities Commercialization Initiative [MUCI] is a joint effort among the following Institutions: Michigan State University [MSU], University of Michigan [UM], Wayne State University [WSU], and associate member Van Andel Research Institute [VARI]. Senior members of the technology transfer offices at each of these institutes along with members from industry comprise the Intellectual Property Commercialization Committee [IPCC] that governs the activities under MUCI. This joint effort among the members of the IPCC is pertinent to continuing to ensure rapid leverage of talent, knowledge, and other resources from the State.

We have successfully achieved the objectives in the MUCI 1 budget; however, many of these are "in progress" and the full realization of each financed under the MUCI 1 budget. The funds we are currently seeking will be used to expand and maintain the objectives we have attained under MUCI 1 allowing us to use these steps as a springboard to propel Life Science commercialization in the state.

MEDC ID#: 245
Title: Michigan Life Science Human Resource Solution
MLSC Proposal Funding Category: Cat III
Program Director Name: Gensheimer, Jan
Applicant Organization: Michigan Biosciences Industry Association

ABSTRACT:

It is the goal of the Michigan Life Science Human Resource Solution proposal to create an infrastructure to address the leadership resource shortage in Michigan. The program is designed to provide industry leadership and talent to take Michigan's bioscience industry to a top 5 rank in life science research and employment. This proposal facilitates critical cooperation and coordination between universities, alumni associations, industry and human resource service firms. The program can facilitate optimum staffing of Michigan's bioscience companies with executive recruiting, recruitment of Michigan graduates and alumni, internships and a central life science job board for the state. In conjunction with other Michigan Economic Development efforts, it is the aim of this proposal to raise the national awareness of the mass of jobs in the Michigan life science industry, and to attract investment and new companies to the state with the recruitment of talented leaders for our new ventures. The proposal will provide for fee sharing between the state, industry and proposal collaborators and participants in order to provide affordable human resource assistance to Michigan life science companies.

MEDC ID#: 302
Title: Arboretum Ventures Life Science Seed Fund: Bringing Life to Science

MLSC Proposal Funding

Category: Cat III
Program Director Name: Garfinkle, Jan
Applicant Organization: Arboretum Ventures

ABSTRACT:

Arboretum Ventures is a new early-stage venture fund targeting investments in life science companies, located primarily in Michigan and the Midwest, that have proprietary technology and the potential for excellent returns. We expect to help create a dozen new life science companies and hundreds of new jobs over the next several years.

The niche that Arboretum Ventures will fill is funding early stage life science companies. These companies require an initial investment from \$150,000 to \$2 million to secure intellectual property, confirm proof of principle, create alliances, build business partnerships, and to fill key management roles. The life science technologies to be targeted by the fund include:

- * Medical Devices
- * Pharmaceuticals
- * Diagnostics
- * Bioinformatics
- * Biotechnology
- * Agriculture

The partners of the fund bring strong operational, consulting, fund management, and investing skills to Arboretum Ventures. The fund managers have been active, early-stage private equity investors for 11 companies over the past few years. In short, the Arboretum Ventures team is uniquely qualified for early-stage venture capital investing.

MEDC ID#: 76
Title: Life Science Zero-Stage Fund
MLSC Proposal Funding
Category: Cat III
Program Director Name: Katz-Pek, Marilyn
Applicant Organization: Biotechnology Business Consultants, LLC

ABSTRACT:

The Life Science Zero-Stage Fund addresses the current resource environment in Michigan by pairing the management consulting services and expertise of Biotechnology Business Consultants, LLC, with zero-stage funding to establish and grow new life science companies in Michigan. The program will provide seed capital to the start-up companies from the MLSC Fund in partnership with angel investors and/or other early stage funds to leverage this equity investment. Over the three-year period, we anticipate investing in up to 15 life science companies through milestone-based investments of no more than \$200,000 per company. These funds will be invested in very early stage companies to support the recruitment of initial management, market research, intellectual property and proof of concept research.