



US Funding Opportunities for
Early Stage
Life Science Companies

APPENDIX

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Boston, Massachusetts

www.innovationnorway.no/boston

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1 Structure of the SBIR/STTR programs

Phase 1

- **Objective:** Establish the technical merit, feasibility and potential for commercialization of the proposed R/R&D efforts and to determine the quality of performance of the small business awardee organization prior to providing further Federal support in Phase II.
- **Funding Support:** Normally does not exceed \$100,000 for total costs (direct costs, F&A costs, and negotiated fee) for a period normally not to exceed six months for SBIR and one year for STTR.

Phase 2

- **Objective:** Continue the R/R&D efforts initiated in Phase I. *Only Phase I awardees are eligible for a Phase II award.*
- **Funding Support:** Funding is based on the results achieved in Phase I, as well as the scientific and technical merit, and commercial potential of the project proposed in Phase II. Support for SBIR and STTR Phase II awards normally may not exceed \$750,000 total costs (direct costs, F&A costs, and negotiated fee) for a period normally not to exceed two years.

Phase 3

- **Objective:** The objective of Phase III, where appropriate, is for the small business concern to pursue with non-SBIR/STTR funds the commercialization objectives resulting from the Phase I/II R/R&D activities. In some Federal agencies, Phase III may involve follow-on non-SBIR/STTR funded R&D or production contracts for products, processes or services intended for use by the U.S. Government.
- **Funding Support:** None. (<http://www.nih.gov/>)

2 US Federal agencies participating in the SBIR program

Department/Agency	Website
Departments of Health and Human Services (DHHS) (incl. National Institute of Health (NIH))	www.hhs.gov www.nih.gov
D. of Agriculture (USDA)	www.usda.gov
D. of Commerce (DoC)	www.commerce.gov
D. of Defense (DoD)	www.defenselink.mil
D. of Education (DoEd)	www.ed.gov
D. of Energy (DoE)	www.energy.gov
D. of Homeland Security (DHS)	www.dhs.gov
D. of Transportation (DoT)	www.dot.gov
Environmental Protection Agency (EPA)	www.epa.gov
National Aeronautics and Space Administration (NASA)	www.nasa.gov
National Science Foundation (NSF)	www.nsf.gov

3 US Federal agencies participating in the STTR program

Department/Agency	Website
Departments of Health and Human Services (DHHS) (incl. National Institute of Health (NIH))	www.hhs.gov www.nih.gov
D. of Energy (DoE)	www.energy.gov
National Aeronautics and Space Administration (NASA)	www.nasa.gov
National Science Foundation (NSF)	www.nsf.gov

4 NIH institutes



National Cancer Institute (NCI)

NCI leads a national effort to eliminate the suffering and death due to cancer. Through basic and clinical biomedical research and training, NCI conducts and supports research that will lead to a future in which we can prevent cancer before it starts, identify cancers that do develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate so they become manageable, chronic diseases.



National Eye Institute (NEI)

NEI conducts and supports research that helps prevent and treat eye diseases and other disorders of vision. This research leads to sight-saving treatments, reduces visual impairment and blindness, and improves the quality of life for people of all ages. NEI-supported research has advanced our knowledge of how the eye functions in health and disease.



National Heart
Lung and Blood Institute

National Heart, Lung, and Blood Institute (NHLBI)

NHLBI provides leadership for a national program in diseases of the heart, blood vessels, lung, and blood; blood resources; and sleep disorders. Since October 1997, the NHLBI has also had administrative responsibility for the NIH Woman's Health Initiative. The Institute plans, conducts, fosters, and supports an integrated and coordinated program of basic research, clinical investigations and trials, observational studies, and demonstration and education projects.



National Human Genome Research Institute (NHGRI)

NHGRI supports the NIH component of the Human Genome Project, a worldwide research effort designed to analyze the structure of human DNA and determine the location of the estimated 30,000 to 40,000 human genes. The NHGRI

Intramural Research Program develops and implements technology for understanding, diagnosing, and treating genetic diseases.



National Institute on Aging (NIA)

NIA leads a national program of research on the biomedical, social, and behavioral aspects of the aging process; the prevention of age-related diseases and disabilities; and the promotion of a better quality of life for all older Americans.



National Institute on Alcohol Abuse and Alcoholism (NIAAA)

NIAAA conducts research focused on improving the treatment and prevention of alcoholism and alcohol-related problems to reduce the enormous health, social, and economic consequences of this disease.



National Institute of Allergy and Infectious Diseases (NIAID)

NIAID research strives to understand, treat, and ultimately prevent the myriad infectious, immunologic, and allergic diseases that threaten millions of human lives.



NIAMS National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

NIAMS supports research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases, the training of basic and clinical scientists to carry out this research, and the dissemination of information on research progress in these diseases.



National Institute of Biomedical Imaging and Bioengineering (NIBIB)

NIBIB improves health by promoting fundamental discoveries, design and development, and translation and assessment of technological capabilities in biomedical imaging and bioengineering, enabled by relevant areas of information

science, physics, chemistry, mathematics, materials science, and computer sciences.



Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

NICHD research on fertility, pregnancy, growth, development, and medical rehabilitation strives to ensure that every child is born healthy and wanted and grows up free from disease and disability.



National Institute on Deafness and Other Communication Disorders (NIDCD)

NIDCD conducts and supports biomedical research and research training on normal mechanisms as well as diseases and disorders of hearing, balance, smell, taste, voice, speech, and language that affect 46 million Americans.



National Institute of Dental and Craniofacial Research (NIDCR)

NIDCR provides leadership for a national research program designed to understand, treat, and ultimately prevent the infectious and inherited craniofacial-oral-dental diseases and disorders that compromise millions of human lives.



National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

NIDDK conducts and supports basic and applied research and provides leadership for a national program in diabetes, endocrinology, and metabolic diseases; digestive diseases and nutrition; and kidney, urologic, and hematologic diseases. Several of these diseases are among the leading causes of disability and death; all seriously affect the quality of life of those who have them.



National Institute on Drug Abuse (NIDA)

NIDA leads the nation in bringing the power of science to bear on drug abuse and addiction through support and conduct of research across a broad range of disciplines and rapid and effective dissemination of results of that research to improve drug abuse and addiction prevention, treatment, and policy.



National Institute of Environmental Health Sciences (NIEHS)

NIEHS reduces the burden of human illness and dysfunction from environmental causes by, defining how environmental exposures, genetic susceptibility, and age interact to affect an individual's health.



National Institute of General Medical Sciences (NIGMS)

NIGMS supports basic biomedical research that is not targeted to specific diseases. NIGMS funds studies on genes, proteins, and cells, as well as on fundamental processes like communication within and between cells, how our bodies use energy, and how we respond to medicines. The results of this research increase our understanding of life and lay the foundation for advances in disease diagnosis, treatment, and prevention. NIGMS also supports research training programs that produce the next generation of biomedical scientists, and it has special programs to encourage underrepresented minorities to pursue biomedical research careers.



National Institute of Mental Health (NIMH)

NIMH provides national leadership dedicated to understanding, treating, and preventing mental illnesses through basic research on the brain and behavior, and through clinical, epidemiological, and services research.



National Institute of Neurological Disorders and Stroke (NINDS)

The mission of the NINDS is to reduce the burden of neurological diseases -- a burden borne by every age group, every segment of society, and people all over the world. To accomplish this goal the NINDS supports and conducts research, both basic and clinical, on the normal and diseased nervous system, fosters the training of investigators in the basic and clinical neurosciences, and seeks better understanding, diagnosis, treatment, and prevention of neurological disorders.



National Institute of Nursing Research (NINR)

NINR supports clinical and basic research to establish a scientific basis for the care of individuals across the life span--from the management of patients during illness and recovery to the reduction of risks for disease and disability; the promotion of healthy lifestyles; the promotion of quality of life in those with chronic illness; and the care for individuals at the end of life. This research may also include families within a community context, and it also focuses on the special needs of at-risk and under-served populations, with an emphasis on health disparities.



National Library of Medicine (NLM)

NLM collects, organizes, and makes available biomedical science information to scientists, health professionals, and the public. The Library's Web-based databases, including PubMed/Medline and MedlinePlus, are used extensively around the world. NLM conducts and supports research in biomedical communications; creates information resources for molecular biology, biotechnology, toxicology, and environmental health; and provides grant and contract support for training, medical library resources, and biomedical informatics and communications research.

5 NIH centers



Center for Information Technology (CIT formerly DCRT, OIRM, TCB)

CIT incorporates the power of modern computers into the biomedical programs and administrative procedures of the NIH by focusing on three primary activities: conducting-computational biosciences research, developing computer systems, and providing computer facilities.



Center for Scientific Review (CSR)

CSR is the focal point at NIH for the conduct of initial peer review, the foundation of the NIH grant and award process. The Center carries out peer review of the majority of research and research training applications submitted to the NIH. In addition, the Center serves as the central receipt point for all such Public Health Service (PHS) applications and makes referrals to scientific review groups for scientific and technical merit review of applications and to funding components for potential award. To this end, the Center develops and implements innovative, flexible ways to conduct referral and review for all aspects of science.



John E. Fogarty International Center for Advanced Study in the Health Sciences (FIC)

FIC promotes and supports scientific research and training internationally to reduce disparities in global health.



National Center for Complementary and Alternative Medicine (NCCAM)

NCCAM is dedicated to exploring complementary and alternative medical (CAM) practices in the context of rigorous science; training CAM researchers and disseminating authoritative information.



National Center on Minority Health and Health Disparities (NCMHD)

The mission of NCMHD is to promote minority health and to lead, coordinate, support, and assess the NIH effort to reduce and ultimately eliminate health disparities. In this effort NCMHD will conduct and support basic, clinical, social, and behavioral research, promote research infrastructure and training, foster emerging programs, disseminate information, and reach out to minority and other health disparity communities.



National Center for Research Resources (NCRR)

NCRR provides laboratory scientists and clinical researchers with the environments and tools they need to understand, detect, treat, and prevent a wide range of diseases. With this support, scientists make biomedical discoveries, translate these findings to animal-based studies, and then apply them to patient-orientated research.



NIH Clinical Center (CC)

CC is the clinical research facility of the National Institutes of Health. As a national resource, it provides the patient care, services, and environment needed to initiate and support the highest quality conduct of and training in clinical research.

6 Examples of private equity funding

6.1 Angel funding

Breathe Technologies, Inc., based in Fremont, California, is developing proprietary medical devices to treat respiratory diseases such as Chronic Obstructive Pulmonary Disease (COPD), a serious disease that affects over 10 millions Americans. Breathe's technology is a portable oxygen delivery and ventilation system that will enable severe COPD patients to perform normal daily activities (talking, walking and exercising) and improve their natural breathing mechanics. The company has completed proof-of-principle product development and is currently completing animal studies and finalizing clinical protocols for commencement of US and EU trials later this year. Life Science Angels participated in this \$4 million Series A round led by Synergy Ventures.

CoMentis, Inc. (funded as Athenagen), a Bay Area pharmaceutical company founded by two Stanford University scientists with entrepreneurial experience, is engaged in the development of small-molecule drugs designed to either inhibit or enhance angiogenesis. CoMentis's two development platforms are based on a new angiogenesis pathway discovered at Stanford University, and technologies acquired from Osprey and Zapaq. CoMentis now has three clinical-stage drugs. Life Science Angels participated in the \$5.7 million Series A financing with Sanderling, who then led the \$50 million B round.

For more information, please visit: www.lifescienceangels.com

6.2 Venture capital funding

Secures \$2.5 Million in Series A Financing from Sante Ventures

4/10/2009

AUSTIN, Texas--(BUSINESS WIRE) Molecular Templates Inc. (MTI), a biopharmaceutical company with a novel protein platform for the development of new cancer therapeutics, today announced it has secured \$2.5 million in financing from Santé Ventures. Proceeds from this financing will be used to continue product development and conduct human clinical trials.

For more information, please visit www.santeventures.com

Sanovia Raises \$8 Million in Venture Funding Led by Chrysalis Ventures

5/5/2009

PHILADELPHIA--(BUSINESS WIRE) Sanovia Corporation, a provider of cost and quality pharmaceutical management products and services to health plans, today announced that it has closed an \$8 million Series C investment round. Chrysalis Ventures, a leading source of equity capital for young growth companies in the Midwest and South, led the Series C financing and Sanovia's existing investors, HLM Venture Partners of Boston and Claritas Capital of Nashville, also participated in the round.

For more information, please visit www.sanovia.com

6.3 Corporate venture funding

Novartis Venture Fund, Cambridge, MA

Our primary focus is on the development of novel therapeutics and platforms. We balance the therapeutic focus with investments in medical devices, diagnostics or drug delivery systems. In our investments we look for unmet need and clinical impact, novel proprietary science and understanding of mechanism, management and board experience and capital efficiency in the program.

We prefer to have our initial investment at the early stage to build the company and follow with additional investment in pace with the company's progress. We continue our approach of larger focused investments and anticipate total investments up to USD 15 – 20 mio per company over its life, but it can be as little as 100'000 USD to get started. We will increase our activities to lead or co-lead deals further and remain open to participate in larger syndicates.

Novartis Venture Fund Cambridge Invests In Companies With These Funding Needs:

- Premoney Valuation: USD 3 000 000 - USD 20 000 000
- Capital Seeking: USD 1 000 000 - USD 10 000 000
- Previously Raised: USD 500 000 - USD 5 000 000

Novartis Venture Fund Cambridge Expects Their Investments To Generate:

- Expected Revenue By Year 5: USD 50 000 000 - USD 250 000 000
- Expected Returns: 10x Investment - 30x Investment
- Expected Years to Exit: 2 Years - 7 Years
- Expected Years to Break Even: 1 Year - 3 Years

www.venturefund.novartis.com

6.4 Investment bank funding

Raising money for JAZZ PHARMACEUTICALS INC

07/16/2008

On July 15, 2008, Jazz Pharmaceuticals, Inc. entered into a Placement Agent Agreement in which Lazard Capital Markets LLC served as lead placement agent and Leerink Swann LLC served as co-placement agent, relating to the sale and issuance by the Company to select investors of up to 3,848,289 units, with each Unit consisting of (i) one share of the Company's common stock, par value \$0.0001 per share, and (ii) a warrant to purchase 0.45 of a share of Common Stock. The sale of the Units is being made pursuant to Subscription Agreements, each dated July 15, 2008, with each of the Investors pursuant to which the Investors agreed to purchase the Units at a purchase price of \$6.75625 per Unit. In the aggregate, the Company would issue up to 3,848,289 shares of Common Stock and warrants to purchase up to 1,731,724 shares of Common Stock pursuant to the terms of the Placement Agent Agreement and the related Subscription Agreements. The Warrants to be issued to each Investor would generally be exercisable for a period of six years from the date of issuance beginning six months after the date of issuance, and would carry an exercise price of \$7.37 per share, which is equal to 110% of the closing consolidated bid price of the Common Stock on July 15, 2008 as reported by NASDAQ. The Company anticipates raising gross proceeds of \$26.0 million. The net offering proceeds to the Company from the sale of the Units, after deducting the placement agents' fees and other estimated offering expenses payable by the Company, are expected to be approximately \$24.5 million. The Investors include select institutional investors as well as certain of the Company's existing stockholders, including KKR JP, LLC, KKR JP III LLC, Thoma Cressey Fund VII, L.P., Thoma Cressey Friends Fund VII, L.P., Beecken Petty O'Keefe L.P., Prospect Venture Partners II, L.P., Prospect Associates II, L.P., Versant Venture Capital II, L.P., Versant Side Fund II, L.P., and Versant Affiliates Fund II-A, L.P. For more information, please visit: www.jazzpharma.com

6.5 Funding through corporate partnering

Affitech announces second milestone in Roche antibody discovery collaboration

09/23/2008

Affitech AS, the Norwegian human antibody therapeutics company, today announced that it has accomplished the second milestone in its research and licensing collaboration with Roche to produce fully human recombinant antibodies against an unnamed oncology target.

Affitech has successfully used its MBAS (Molecule Based Antibody Screening) system that included its proprietary antibody library and high throughput screening technology to identify several fully human lead antibody candidates. These were then subjected to further engineering in order to generate final candidates that met Roche's various predetermined success criteria. This accomplishment triggered a milestone payment of an undisclosed amount from Roche to Affitech.

Affitech and Roche entered into this collaboration in 2007 for Affitech to identify and engineer fully human recombinant antibodies against one of Roche's oncology targets. Under the terms of the agreement Roche will now utilize these antibodies for further preclinical evaluation with exclusive rights to develop and commercialize resulting antibodies. Affitech would receive additional milestone payments upon successful development by Roche of these antibodies in oncology or other indications and royalties on worldwide net sales of any successfully developed product candidates. For more information, please visit:

www.affitech.com

Anylam pays \$31M for Isis ssRNAi collaboration

04/29/2009

Cambridge (MA) biotech Anylam Pharmaceuticals Inc. has agreed to pay Isis Pharmaceuticals Inc. up to \$31 million in license fees, as part of a collaboration between the two companies to develop single-stranded RNAi (ssRNAi) technology.

Anylam's \$31 million in upfront payments and research and development milestones will be paid out to Isis through four tranches -- \$11 million on signing, \$10 million for demonstrating in vivo efficacy in rodents, \$5 million for non-human primates demonstrating in vivo efficacy and \$5 million for starting the clinical trial of the ssRNAi drug. In exchange for the payment, Anylam will gain access to Isis intellectual property around ssRNAi antisense drugs, as well as eligibility for up to 5 percent of future sublicense payments of Isis' ssRNAi products.

According to a statement from the two companies, the collaboration is expected to broaden Isis' current reach of its ssRNAi, which is the prime RNAi pathway to block disease-causing proteins.

For more information, please visit: www.isispharm.com

6.6 Funding from disease foundations and non-profits

Osiris Therapeutics Announces \$2 Million Milestone Payment for Clinical Progress of a Stem Cell Therapy for Type 1 Diabetes

06/27/2008

Columbia, Maryland--(BUSINESS WIRE) Osiris Therapeutics, Inc. today announced that it has achieved \$2 million in milestone payments from the Juvenile Diabetes Research Foundation (JDRF) for progress made on a Phase II clinical trial evaluating Prochymal, a mesenchymal stem cell (MSC) therapy, for patients recently diagnosed with type 1 diabetes. The payments were triggered when Osiris accomplished certain clinical and regulatory milestones including initiating patient treatments.

For more information, please visit: <http://www.osiris.com/>.

About JDRF

JDRF is a leader in setting the agenda for diabetes research worldwide, and is the largest charitable funder and advocate of type 1 research. The mission of JDRF is to find a cure for diabetes and its complications through the support of research. Type 1 diabetes is a disease which strikes children and adults suddenly and requires multiple injections of insulin daily or a continuous infusion of insulin through a pump. Insulin, however, is not a cure for diabetes, nor does it prevent its eventual and devastating complications which may include kidney failure, blindness, heart disease, stroke, and amputation.

Since its founding in 1970 by parents of children with type 1 diabetes, JDRF has awarded more than \$1.3 billion to diabetes research, including more than \$156 million in FY2008. In FY2008 the Foundation funded more than 1,000 centers, grants and fellowships in 22 countries.

For more information, please visit: www.jdrf.org

Vertex Pharmaceuticals and Cystic Fibrosis Foundation Therapeutics Enter Collaboration to Develop Oral Drug Candidate VX-770 for CF

03/23/2006

Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) and Cystic Fibrosis Foundation Therapeutics, Inc. (CFFT) today announced that they have entered into a new collaboration to accelerate clinical development of VX-770, a novel, oral drug candidate for the treatment of cystic fibrosis (CF). CFFT is the nonprofit drug discovery and development affiliate of the Cystic Fibrosis Foundation. As part of the agreement, CFFT will pay Vertex approximately \$13.3 million in development support through the fourth quarter of 2007. Vertex plans to initiate clinical development of VX-770 in the second quarter of 2006 and to progress to clinical studies in patients with CF in the second half of the year. VX-770 is the first of a new class of oral agents that specifically target a key mechanism underlying CF. Vertex retains worldwide rights to develop and commercialize VX-770.

Under the new collaboration announced today, CFFT and Vertex will share certain costs associated with clinical development of VX-770. CFFT will provide to Vertex approximately \$13.3 million to support clinical development of VX-770 through the fourth quarter of 2007. Vertex retains worldwide rights to develop and commercialize VX-770. Upon commercialization, Vertex would pay CFFT certain royalties and sales milestones based on specific net sales thresholds. Vertex initiated its CF research program in May 2000 as part of a collaboration with CFFT, and expanded the agreement in May 2004. In addition to the new collaboration announced today, in January 2006, Vertex and CFFT entered into an expanded research collaboration to discover novel compounds known as correctors, which may work by increasing the number of CFTR channels on the cell surface. To date, CFFT has provided to Vertex more than \$40 million for CF research.

For more information, please visit: www.cff.org or www.vpharm.com

7 Examples of State Government funding

Mass. life science firms get \$3.4m in state loans

04/30/2009

Boston Globe Newspaper

Staff

Seven early-stage life sciences companies, working in areas ranging from cancer drugs to treatments for spinal cord injuries to tests for genetic disorders, were awarded a total of \$3.4 million in loans yesterday under the state's \$1 billion life sciences initiative.

The so-called Accelerator loans were approved by the Massachusetts Life Sciences Center, a quasi-public agency charged with implementing the state's life sciences program. The center received 88 applications for the loans.

Winning loans of up to \$500,000 were Eutropics Pharmaceuticals of Boston, an oncology drug company; Good Start Genetics of Boston, a molecular diagnostics company; InVivo Therapeutics of Cambridge, a stem cell and biomaterials company; Pluromed of Woburn, a maker of injectable plugs for surgery; Spectra Analysis of Marlborough, a supplier of spectroscopy systems; Wadsworth Technologies of Westborough, a medical device company; and Wolfe Laboratories of Watertown, a pre-clinical services firm.

"This is a big chunk, and we plan to put it to work in Massachusetts right away," said Frank Reynolds, president of InVivo Therapeutics, which is developing spinal cord injury treatments using biomaterials combined with drugs and cells.

Reynolds said he was also being wooed by economic development officials in Pennsylvania and Ireland, which had sought to host InVivo's clinical trials.

A major goal of the loan program is to boost companies in the critical stage between when they license medical technology and the time they can attract venture capital or other financing. Another goal is to help companies expand in Massachusetts. Applicants were evaluated by the life sciences center's advisory

board, chaired by Harvey Lodish, biology professor at the Massachusetts Institute of Technology.

Since the 10-year, \$1 billion life sciences initiative was signed into law by Governor Deval Patrick last July, the center has invested \$42.5 million - some of it previously appropriated - in projects, organizations, and researchers. But the amount set aside for loans and other investments in the current fiscal year was reduced 40 percent, from \$25 million to \$15 million, by the Legislature in a January.

In an interview, Patrick said he hoped to increase annual funding as the economy strengthens. "We've got limits on resources and limits on personnel, but given the limits, the results are encouraging so far," he said.

8 Examples of Federal Government funding

Securing a Slice of NIH Stimulus Funding

05/01/2009

GEN Genetic Engineering and Biotechnology News (Vol. 29, No. 9)

Christianne Bird

The 2009 U.S. American Recovery and Reinvestment Act (ARRA) has many life science tool companies abuzz with anticipation of new research funds helping their firms reverse the damages of the economic recession. The 2009 economic recovery bill contains \$10.4 billion dedicated to the U.S. National Institutes of Health (NIH).

The ARRA funding marks the first significant increase in the NIH budget since the doubling of funds from 1998 to 2003. The \$10.4 billion has been allocated to several priorities, including:

- \$7.4 billion split among institutes, centers, and the Common Fund for scientific research projects
- \$0.8 billion to the Office of the Director for research priorities, including Challenge Grants
- \$0.3 billion for shared instrumentation and other capital equipment
- \$1.0 billion for extramural construction, repairs, and alterations
- \$0.5 billion for NIH buildings and facilities
- \$0.4 billion for Comparative Effectiveness Research

Of greatest interest to life science vendors are the research-directed awards (\$7.4 and \$0.8 billion) and instrumentation grants (\$0.3 billion), which total \$8.5 billion (Figure). With an estimated 15 to 25% of research grants used for purchasing reagents and equipment and 100% of capital equipment grants being spent on instrumentation, life science vendors can expect researchers to spend roughly \$1.5 to \$2.4 billion on products over the next two to three years. With grant

application deadlines nearing, market participants are asking the \$2 billion question: Which companies will benefit most?

The \$8.2 billion directed toward the institutes, centers, Common Fund, and Office of the Director for research priorities will generate the greatest revenues for life science vendors. Companies can expect between \$1.2 to \$2.1 billion of these funds to be spent on reagents and instruments. Therefore, both life science reagents and instrument providers will benefit. Companies offering complete workflows in key research areas are expected to experience the greatest gains.

In addition to research-directed funds, the National Centers for Research Resources (NCRR) will distribute \$300 million in ARRA funds dedicated to helping researchers purchase instrumentation. NCRR will divide its instrumentation funding into two categories: high-end instrumentation grants for a single item that costs at least \$600,000 and a maximum of \$8 million, and the shared instrumentation grant program for equipment in the range of \$100,000 to \$500,000.

NCRR listed several examples that fell into the high-end instrumentation category, including structural and functional imaging systems, macromolecular NMR spectrometers, high-resolution mass spectrometers, cryoelectron microscopes, and supercomputers. NCRR also listed instruments that may fall under the shared instrumentation grant program for equipment in the range of \$100,000 to \$500,000. These suggestions include confocal and electron microscopes, biomedical imagers, mass spectrometers, DNA sequencers, biosensors, cell sorters, x-ray diffraction systems, and NMR spectrometers among others.

While certain product portfolios lend themselves to attracting stimulus fund grantees, perhaps even more important is a company's history with academia and government institutions as customers. Life science vendors enjoy a mixed customer base, including academic and government labs, biotechnology and pharmaceutical companies, clinical research labs, hospitals, clinical diagnostic companies, forensic laboratories, food testing and agricultural labs, as well as other applied testing and niche fields.

However, those companies that have established relationships in academia and government institutions and generate a majority of their revenues from those customer bases will have an advantage over vendors catering to private industry. While grantees may alter their vendor preferences to seek out new and previously unattainable instruments, they are unlikely to vary their loyalties for reagents. Therefore, companies that historically targeted the private industry may find that it is too late to make a presence in academia to influence purchasing decisions.

8.1 US Government grants from NIH for medical research collaboration with academia

National Institutes of Health (NIH) Awards \$1.66 Million Grant to Ceragenix Pharmaceuticals, Inc. (CGXP.OB) to Evaluate Cerashield(TM) Coating to Reduce Orthopedic Implant Infections

3/30/2009

DENVER--(BUSINESS WIRE) Ceragenix Pharmaceuticals, Inc. ("Ceragenix") (OTCBB:CGXP), a medical device company focused on infectious disease and dermatology today announced that the National Institutes of Health ("NIH") has awarded a \$1.66 million grant to the University of Utah to fund research evaluating a Cerashield™ coating to reduce orthopedic implant infections. Roy Bloebaum, PhD, Research Professor at the University of Utah and Career Scientist and Director, Bone and Joint Research Laboratory of the Veterans Administration Hospital, Salt Lake City, is the principal investigator on the grant. The grant will fund preclinical evaluation of orthopedic implants coated with CSA-13, the active ingredient in Cerashield™ coatings. Multiple in vitro tests have demonstrated that CSA-13 has potent activity against a broad spectrum of strains of bacteria, including multidrug resistant strains such as Methicillin Resistant Staph Aureus (MRSA), which are associated with orthopedic implant infections. Paul B. Savage, PhD, Professor at Brigham Young University and inventor of CSA-13 is a co-investigator on the grant.

For more information, please visit: www.ceragenix.com

Nanogen, Inc. (NGEN) Awarded \$2.5 Million Grant For Development Of Diagnostics For Sepsis And Pneumonia

8/1/2005

SAN DIEGO, Aug. 1 /PRNewswire-FirstCall/ Nanogen, Inc. , developer of advanced diagnostic products, announced today that the National Institute of Allergy and Infectious Diseases (NIAID), a division of the U.S. National Institutes of Health (NIH) has awarded the company a grant in the amount of \$2.5 million over the next five years for a research project to develop a prototype fully integrated diagnostic system for clinical labs to identify infectious agents that cause sepsis and community-acquired pneumonia (CAP). The grant will enable Nanogen to develop improved molecular biological methods, miniaturize those methods, and demonstrate the performance of this new molecular diagnostic approach to diagnose sepsis and CAP in a hospital laboratory setting.

For more information, please visit: www.nanogen.com

8.2 US Government SBIR and STTR grants for medical research in industry

Transgenomic, Inc. (TBIO) Awarded SBIR Grant to Support Development of SURVEYOR(R) Endonuclease Adaptor-ligated Libraries (SEAL) for Determining Whole Genome Sequence Variation High Throughput

11/20/2008

OMAHA, Neb., Nov. 20 /PRNewswire-FirstCall/ -- Transgenomic today announced that it has been awarded a Phase I Small Business Innovation Research (SBIR) award by the National Science Foundation (NSF) to support the development of its proposed SURVEYOR Endonuclease Adaptor-ligated Libraries (SEAL) technology. A cost-effective and high throughput enabling technology for whole genome analysis, SEAL will identify DNA variations between a reference genome and a test genome with the potential to reduce the cost of whole genome analysis of such variations to under \$10,000. The award is for \$100,000 for a duration of six months.

For more information, please visit: www.transgenomic.com

9 Examples of Department of Defence funding

Elusys Therapeutics Awarded \$12 Million Contract to Further Develop Anthim, the Company's Anthrax Therapeutic

09/25/2007

PINE BROOK, N.J., Sept. 25 /PRNewswire/ Elusys Therapeutics, Inc. (Elusys), a privately held biopharmaceutical company developing antibody-based therapies for the treatment of life-threatening infectious diseases, today announced it has been awarded a contract for \$12 million for advanced development of Anthim(TM), the company's late-stage anthrax therapeutic. This project has been funded in whole or in part with Federal funds from the National Institute of Allergy and Infectious Disease, National Institutes of Health and the Biomedical Advanced Research and Development Authority, Department of Health and Human Services, under Contract No. HHSN272200700035C. To date, Elusys has received more than \$32 million from NIAID/BARDA and the Department of Defense in support of Anthim and the company's Heteropolymer Antibody(TM) technology.

For more information, please visit: www.elusys.com