



The Jackson Laboratory—Florida: A healthier economy and better health for all Floridians

Heart disease is the greatest health challenge of our time. It is the number-one killer of the human race, claiming the lives of 17 million people around the world and 42,000 Floridians each year.

Up to 5.3 million Americans have Alzheimer’s disease, and risk doubles every five years over age 65. Currently, 500,000 Floridians suffer from Alzheimer’s, and that number will grow exponentially as the population ages.

Diabetes is the third leading cause of death in the U.S. Average medical expenditures for diabetes patients are 2.3 times higher than for those without diabetes, and complications contribute to blindness, kidney failure and heart disease.

*Alzheimer’s,
heart disease and
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Florida \$41 billion
annually — a
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population ages.*

Florida has been hard hit by the economic crisis and cannot afford swiftly escalating healthcare costs associated with these and other diseases. In order to provide a secure and healthy future, Florida not only must create jobs, it also must take action to prevent and treat Alzheimer’s, heart disease and diabetes.

The Jackson Laboratory (JAX), the world’s mammalian genetics research leader, will address this problem by creating a research institute in Florida dedicated to discovering and developing genetics-based approaches to preventing, treating and curing Alzheimer’s, heart disease and diabetes. At The Jackson Laboratory—Florida, JAX’s genetics expertise and the University of South Florida’s clinical skill will combine to illuminate how the interplay of genes, lifestyle and environment can cause disease and affect drug response. JAX scientists and USF physicians will work with Sarasota Memorial Healthcare System to bring new medical discoveries to the bedside. They will help patients live longer healthier lives by developing disease prediction, prevention and treatment plans tailored to an individual’s genetic profile.

JAX and USF bring key strengths to the project. JAX scientists will unravel complex disease genetics, sequence patient genomes and identify genetic variations associated with disease risk. USF will provide clinical expertise, tens of thousands of patient DNA samples, a statewide network of patient data and healthy volunteers—including local retirees—who will act as research study controls. Research will be conducted over decades and will involve tens of thousands of Floridians.

Unique among nonprofit research institutions, JAX supplements its research budget by operating a \$135 million-a-year nonprofit business that provides scientific services and 6,000 strains of genetically defined mice to 19,000 pharma, biotech and academic researchers in more than 50 countries. Surpluses generated help underwrite JAX research into human disease. For more than 80 years, JAX has grown its operations and employment, expanded its research and services, launched spin-offs, licensed intellectual property and moved into new markets—all based on this successful business model. JAX has succeeded in Maine and California. It has the proven ability to succeed in Florida.

Economists estimate that The Jackson Laboratory (JAX)—Florida will help transform Florida’s economy by creating 1,800 — 3,000 high-wage jobs, at least \$5.2 billion in economic impact and at least \$129 million in state revenue by 2030. It will spawn spin-offs and start-ups; attract new research, healthcare and education enterprises; and synergize Florida’s previous biotech investments. This project will give Florida a world center for Alzheimer’s, heart disease and diabetes research and treatment, as well as a stake in the \$452 billion personalized medicine market. The Jackson Laboratory—Florida is a sound and strategic investment that will bring a healthier economy and better health to all Floridians.

The threat of Alzheimer’s, heart disease and diabetes

Up to 4.5 million Americans have Alzheimer’s disease, a devastating condition that cannot be successfully treated and is always fatal. Sadly, Florida is in the grip of an Alzheimer’s epidemic, with 500,000 Floridians suffering from dementia—the second highest rate in the U.S. Moreover, the risk of developing Alzheimer’s doubles every five years beyond age 65.

Heart disease is the greatest health challenge of our time. It is the number-one killer of the human race, claiming the lives of 17 million people around the world and 42,000 Floridians every year. One in three Floridians suffers from heart disease. No other disease causes more days in the hospital—or has a more direct genetic cause and effect. Heart disease and cardiac drug response are linked to age, race and sex. Cardiomyopathy, sudden cardiac death and stroke have genetic causes, while anti-clotting drugs can range from effective to lethal, depending on a patient’s genetic makeup.

Diabetes is the third leading cause of death in the U.S. The Centers for Disease Control estimates that one in three Americans born after 2000 will develop the disease in his or her lifetime, costing the U.S. \$514 billion a year by 2025. Currently, 20 percent of people over age 65 have diabetes. A recent study by the Institute for Alternative Futures found that Florida is one of the nation’s three top "diabetes hot spots" and will bear many of the costs of a growing diabetes epidemic in the next 15 years.

Given Florida’s demographics, there is no better location for a new research institution focused on Alzheimer’s, heart disease and diabetes.

The number of Floridians over age 60 is nearing 25 percent of the state’s population, compared to 13 percent nationally. More than 3.3 million Floridians are on Medicare (16 percent, compared to 12 percent nationally), and the state’s healthcare expenditures are growing faster than the U.S. average.

Alzheimer’s, heart disease and diabetes cost Florida an estimated \$41 billion a year. As the population grows older, expense to the state will skyrocket due to the burden of these and other age-related diseases.

Florida has been hit hard by the economic crisis. The state once led the nation in job creation, but now has the fourth highest unemployment rate in the country. Personal income is down, Floridians earn less than other Americans and graduates of Florida universities can no longer look forward to a secure future in the Sunshine State. Clearly, Florida cannot afford the burden of swiftly escalating healthcare costs.

In order to give its citizens a healthy and prosperous future, Florida not only must create jobs, it also must take action address the problem of Alzheimer’s, heart disease and diabetes. The ability to accurately predict, prevent and treat these diseases based on an individual’s genetic makeup would be game-changing for the economy and for the people of Florida.

The vision for The Jackson Laboratory—Florida

The Jackson Laboratory (JAX), the world’s premier mammalian genetics research institution, will help transform Florida’s health and economic burdens by creating a Florida research institute dedicated to discovering and developing genetics-based approaches to preventing, treating and curing Alzheimer’s, heart disease and diabetes.

The Jackson Laboratory—Florida will combine JAX’s renowned genetics expertise with the University of South Florida’s academic and clinical skill. This exciting partnership will illuminate how the interplay of genes, lifestyle and environment can cause disease and affect drug response. JAX scientists and USF physicians will work with Sarasota Memorial Healthcare System to bring new medical discoveries into clinical practice. They will help patients live longer, healthier lives by developing disease prediction, prevention and treatment plans tailored to an individual’s genetic profile. They will help transform America’s overburdened and costly healthcare model into a thriving new era of personalized healthcare.

The Jackson Laboratory—Florida will position Florida as a world center for personalized medical solutions for Alzheimer’s, heart disease and diabetes, and it will place it at the forefront of the \$452 billion (U.S.) personalized medicine market. This

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specialized focus will generate a new biomedical village that will include pharmaceutical, biotechnology, healthcare and wellness companies; a hospital, specialized clinics and “concierge” physician practices; academic and professional health education programs and facilities; and support businesses.

JAX and USF bring key strengths to the project. JAX scientists will unravel complex disease genetics, sequence patient genomes, aggregate and analyze research data using next-generation bioinformatics, identify genetic variations and interactions associated with disease risk, and perform preclinical testing in mouse models.

USF will provide clinical expertise, tens of thousands of patient DNA samples, a statewide network of patient data, the Byrd Alzheimer’s Institute, a new heart institute dedicated to the genomics and pharmacogenomics of cardiovascular disease, and healthy volunteers—including local retirees—who will act as research study controls. Drug and diagnostic discoveries

made at The Jackson Laboratory—Florida and developed in collaboration with biopharma ultimately will return to USF for clinical testing and patient use.



Together, JAX and USF will conduct a longitudinal study of tens of thousands of Floridians and will explore the genetic, lifestyle and environmental factors of Alzheimer’s, heart disease and diabetes. Like the landmark Framingham heart study, this project will: 1) vastly expand our understanding of these diseases; 2) demonstrate that patients can live years longer based on a combination of genetics, lifestyle and environment; and 3) provide the research necessary to improve disease diagnosis and treatment.

The focus of The Jackson Laboratory—Florida will be on Alzheimer’s, heart disease and diabetes. However, the techniques and discoveries made at the new institute ultimately will be applied to other diseases of aging, including cancer. For brevity, we have chosen to highlight two examples of The Jackson Laboratory—Florida research: Alzheimer’s disease and bioinformatics/computational biology. These are outlined below.

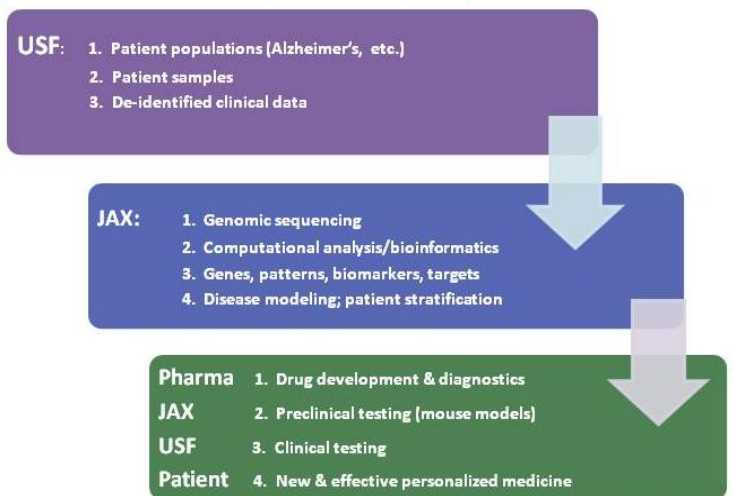
Alzheimer’s disease

Research into the genetics of neurodegenerative disease is a noted JAX strength, while Alzheimer’s disease is one of USF’s signature programs. USF’s team of top researchers, doctors, clinicians and educators is dedicated to the prevention, treatment and cure of Alzheimer’s and related disorders. USF has access to tens of thousands of patients and associated data not only from the USF Health Byrd Alzheimer’s Institute and USF Medical Center, but also from clinics and practices linked to USF via electronic medical records under the “Paper Free Florida” project. USF will collect clinical data, tissue and DNA samples from these patients. Samples will be banked and sequenced by JAX and results will be linked back to anonymous patient records.

JAX scientists will then analyze genomic and clinical data for genetic variations that cause Alzheimer’s. They also will search for molecular targets for new drugs, as well as disease biomarkers that may be used for early diagnosis. This analysis will allow JAX to group patients with similar genomic profiles into categories—much the way Amazon.com segments its customers based on buying profiles. Genomic segmentation on a massive scale allows scientists to discover patterns of disease that otherwise would go undetected.

When JAX scientists find meaningful patterns of genetic variation (a drug target or diagnostic biomarker), the information will be shared with commercial partners and will go on to inform each stage of research, development, testing and eventual patient use.

Sample model of the JAX-USF Partnership



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This approach will speed disease prediction, prevention, diagnosis and treatment. It will aggregate valuable patient data that may be mined by researchers worldwide. It will enable physicians to genetically screen patients so they receive the right dose of the right drug at the right time. It will eliminate treatment by trial and error, poor clinical outcomes and harmful drug reactions. All these benefits will in turn dramatically lower healthcare costs.

Bioinformatics/computational biology

Low-cost, high-speed genome sequencing and electronic medical records are generating a flood of data that will provide new disease insights and lead to better medical diagnosis and treatment. However, the volume and complexity of these data are overwhelming. The future of medical research hinges on access to computational biologists and bioinformatics experts who can analyze vast quantities of data to uncover patterns and meaning. These experts provide biopharmaceutical companies with the tools they need to develop new diagnostics and treatments.

JAX is a world leader in bioinformatics and computational biology. The Jackson Laboratory—Florida will fill the chasm between data generated by powerful research tools and knowledge needed to drive personalized medicine. The Jackson Laboratory—Florida will aggregate and analyze data from its own research. JAX experts also will be able to research data generated by others, including the seven research institutions in Florida, on a fee-for-service basis.

Specialization in bioinformatics and computational biology will give The Jackson Laboratory—Florida a vital advantage in a crucial and rapidly expanding market.

The JAX nonprofit business model

Unique among nonprofit research institutions in the world today, JAX supplements its research budget by operating a \$135 million-a-year nonprofit business that provides scientific services and 6,000 strains of genetically defined mice to 19,000 pharma, biotech and academic researchers in more than 50 countries. JAX is well versed in translating the complex science of genomics, which underpins all personalized medicine, into internationally marketed products and services. Surpluses generated help underwrite JAX research into human disease.

For more than 80 years, JAX has successfully grown its operations, expanded its research and moved into new markets, based on the business model it will follow in Florida. Revenues have risen from \$34 million in 2000 to \$126 million in 2010. Jobs have risen from 500 to 1,300 in the same 10-year period. Square footage at JAX's Bar Harbor campus increased from 521,705 sq. ft. to 714,230 sq. ft. during this period, with capital construction expenditures totaling more than \$198 million. JAX has succeeded in Maine and California. It has the proven track record to succeed in Florida.

Innovation has significantly increased sales of JAX products and services. Recent highlights include mouse sperm cryopreservation and recovery technology that has generated new products and services worldwide and allowed JAX to double its number of employees in cryobiology. A cost center only three years ago, cryobiology now accounts for \$7 million in annual revenue. One of JAX's most important innovations is the *NSG mouse*, which is used by over 1,000 research groups worldwide and accounts for \$4 million in annual revenue growth.

JAX has launched start-ups based on JAX technology. Bar Harbor Biotech (BHB) manufactures and globally distributes plates for measuring gene expression levels. Scintilla Corp. develops super-high resolution 3-D microscopy instruments. JAX also has licensed technology and products to early-stage companies such as Primogenix and Predictive Biology, and it has an active and growing technology transfer office.

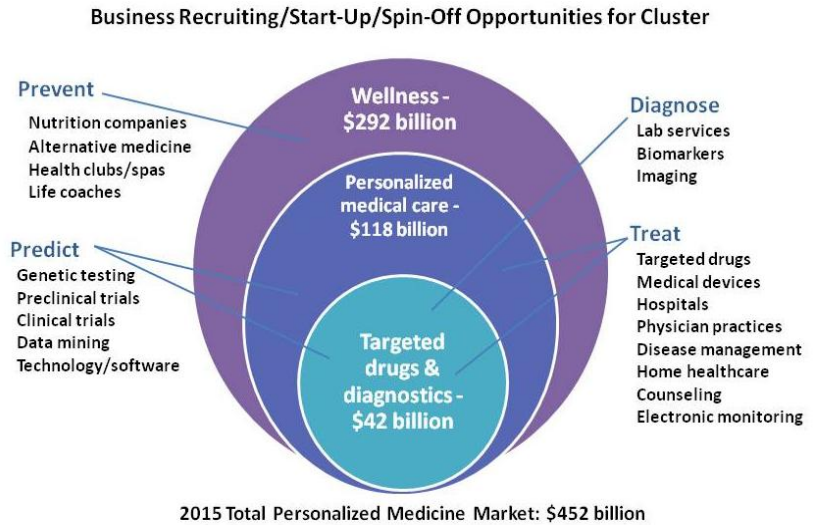
JAX partnerships and collaborations

Scientists no longer simply license their research to companies for commercial development. Instead, research institutes, biotech start-ups and big pharma collaborate in order to translate discoveries into treatments. The Jackson Laboratory—Florida will be built on this model of collaboration, in which partners share research, data and resources in order to overcome R&D bottlenecks and speed treatments to market. This model will save money, reduce duplication and produce better, faster results.

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JAX scientists and senior managers possess unique research and administration strengths, and many have biopharma industry experience. This powerful combination has proven successful at recruiting new research and corporate partners. For example, Athleticcode, a California start-up, has signed a Memorandum of Understanding with JAX to establish research and corporate facilities at The Jackson Laboratory—Florida, where it will genetically test and train athletes to maximize athletic potential and minimize risk of injury (see Appendix III).

JAX has forged close ties with all major pharmaceutical companies, including Merck, Pfizer, Amgen, Novartis, Sanofi-Aventis, Hoffman-La Roche, AstraZeneca, GlaxoSmithKline, Eli Lilly and Abbott. JAX will capitalize on these global relationships and recruit biopharmaceutical companies and start-ups eager to enter the personalized medicine market. The biotech cluster that will grow around JAX and USF has the potential to become a world center for personalized medicine that will create thousands of jobs and generate hundreds of millions of dollars in revenue for Florida.



Jobs, biotech growth and economic impact

Florida's economy has long depended on real estate, agriculture and tourism—industries devastated by the economic recession. Foreseeing the risks of this “boom and bust” model, former Governor Jeb Bush launched an initiative to diversify the state's economy by attracting the biotechnology industry. The state's successful recruitment of Scripps, Sanford-Burnham, Torrey Pines and other laboratories has established biotechnology as a Florida economic driver and proven the economic importance of biotech clusters. By conservative figures, biotechnology clusters create over \$7 in economic returns from every \$1 invested – a 7:1 return on investment (source: Rick Scott for Governor Website).

According to a January 2010 report from the Florida Office of Program Policy Analysis and Government Accountability (OPPAGA), the seven research institutes recruited to Florida under the Innovation Incentive Program have spawned more than 15,700 jobs in their start-up phase alone. Despite this strong number and the OPPAGA report's statement that significant cluster growth can take decades, analysts have questioned the benefit of biotech investment in Florida. In response, Enterprise Florida appended a letter to the OPPAGA report stating that, according to its figures, state investment had increase the number of Florida biotech companies from 36 to 170 – a growth rate of nearly 500 percent. Florida is now recognized as the top state in biotechnology, which provides average wages higher than all other industries (sources: OPPAGA; Enterprise Florida).

Some question whether the state should invest in another research institution. Local economic development officials and healthcare leaders strongly support investment in The Jackson Laboratory—Florida because it is *not* another basic research lab. Rather, The Jackson Laboratory—Florida is a partnership of three respected nonprofit institutions (JAX, USF, SMH) that will provide the critical component needed to bring truly transformational healthcare to life. The Jackson Laboratory—Florida will translate its own research—as well as research from Florida's seven other research institutions—directly into clinical care. It will find the genetic targets that drug companies need to develop new, more effective treatments and will swiftly moves medical discoveries from bench to bedside. The Jackson Laboratory—Florida will be the tipping point that synergizes Florida's biotech investments and positions the state to capitalize on the business opportunities emerging around personalized medicine.

*The Jackson Laboratory—Florida will generate **1,800 – 3,000 jobs**, a **\$934 million** direct project impact and at least **\$5.2 billion** in total economic impact.*

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According to a 2010 PricewaterhouseCoopers report, personalized medicine offers tremendous potential to generate high-paying jobs, with 11 percent annual industry growth rate and a total market of \$452 billion by 2015. This is the market The Jackson Laboratory—Florida will tap.

Economists estimate that, by itself, *The Jackson Laboratory—Florida will create 432 direct, high-wage positions and make a direct project impact of \$934 million* in its first 20 years (see Appendix IV for details). These officials expect that The Jackson Laboratory—Florida will generate spin-offs and start-ups; attract new research, healthcare and education enterprises; and spawn related and support businesses. This combined economic activity will create *1,800 – 3,000 jobs and a total indirect economic impact of at least \$5.2 billion*, with at least *\$129 million in state revenue*, over 20 years. The Jackson Laboratory—Florida is a sound and strategic investment that will bring a healthier economy and better health to all Floridians.

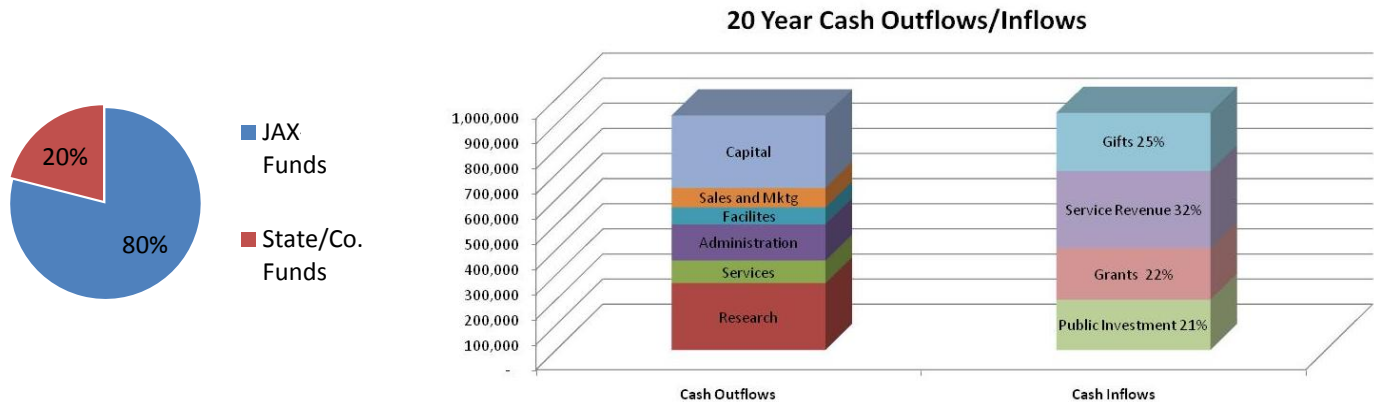
The Jackson Laboratory—Florida will positively impact the Florida economy in another crucial way: Its discoveries will lower the cost of healthcare for both the state and its citizens. Alzheimer’s, heart disease and diabetes cost Florida \$41 billion a year. National projections show that these costs will triple in the next 20 years based on increasing age alone. Given its demographics, Florida will take one of the hardest hits.

Much of this increased cost arises from the inability to predict the precise regimen for prevention and treatment. Accurate disease prediction, prevention, diagnosis and treatment based on an individual’s makeup is the focus of The Jackson Laboratory—Florida. With Alzheimer’s disease alone, it is reasonable to estimate that The Jackson Laboratory—Florida would cut direct cost to the state by 50% within 10 years—a potential savings of \$1.5 billion over a decade.

With Alzheimer’s disease alone, JAX—Florida could cut direct cost to the state by 50% in 10 years—a potential savings of \$1.5 billion over a decade.

Business Plan for The Jackson Laboratory—Florida

The model for The Jackson Laboratory—Florida calls for a total project expenditure of \$934 million over 20 years. Of that expenditure, JAX, USF and SMHS are asking the state to provide \$50M in funding for FY2011-12, \$30M for FY2012-13 and \$20M for FY2013-14, with Sarasota County providing another \$100 million through a voter-approved referendum. JAX will raise the remaining 80%—roughly \$800M—through philanthropy, grant revenue and a services business, as outlined below.



The Jackson Laboratory—Florida will generate capital and revenue from the areas listed below. Complete financial statements, additional details and budget narrative appear in Appendix IV.

- 1. Private Philanthropy.** JAX will raise \$128 million from philanthropic sources over the first 10 years of the project; \$100 million of these funds will be for endowment and the remainder for annual support.

2. Educational programs and scientific services. The Jackson Laboratory—Florida will generate revenue by offering educational programs and scientific services, and by training a new generation of health professionals who can bridge the current gap between academia and industry.

3. National Institutes of Health grants and contracts. In FY10, JAX received \$68 million in NIH research grants, placing JAX in the top five percent of NIH-funded institutions. Over the past five years, JAX’s NIH funding success rate has run nearly twice the national average. The Jackson Laboratory—Florida will expand JAX’s proven record in securing NIH grants and contracts, increasing the flow of federal funding into Florida by millions of dollars each year.

4. Pharmaceutical and biotechnology industry partnerships. The pharmaceutical and biotechnology industries are investing hundreds of millions of dollars a year in collaborations with research institutions. As the U.S. population ages, biopharma increasingly will seek tailored therapies and diagnostics for Alzheimer’s, heart disease and diabetes. The Jackson Laboratory—Florida will develop partnerships with biopharma to perform basic research, preclinical testing and clinical trials to develop new disease treatments. The Jackson Laboratory—Florida will work toward obtaining at least one biopharmaceutical partner by the end of the first full year of operations in the permanent facility.

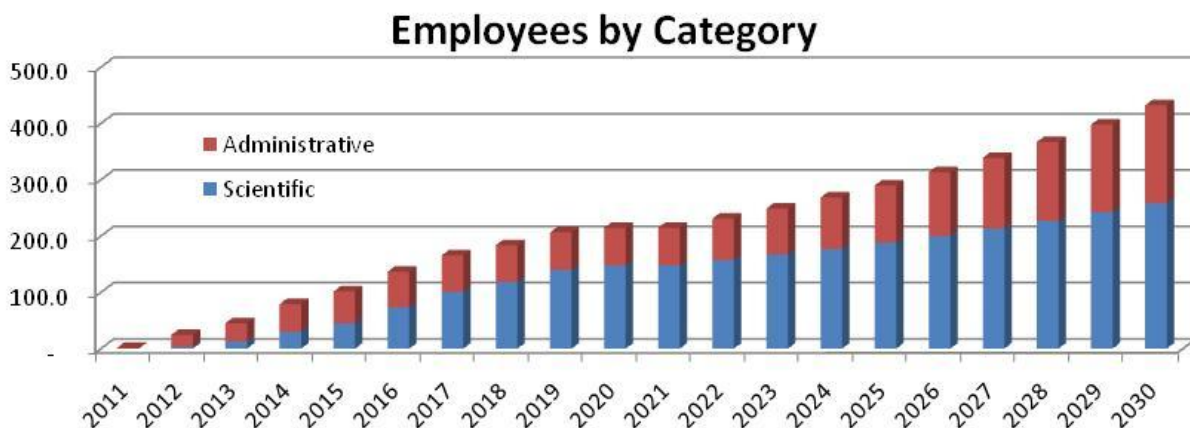
Royalties from intellectual property

The Jackson Laboratory—Florida will offer significant opportunity for intellectual property, technology transfer and licensing. Although JAX cannot predict or guarantee discovery or creation of a product with the market impact of Gatorade®—which has brought \$80 million in royalties to the University of Florida since 1973—it is likely that potential commercial discoveries will arise from The Jackson Laboratory—Florida. Because Florida state and county investment would give The Jackson Laboratory—Florida start-up funds, JAX is offering a 10 percent royalty on intellectual property licensed by The Jackson Laboratory—Florida during its first 10 years of operation. This royalty will be split between the state (5 percent) and county (5 percent).

Staffing and management

The Jackson Laboratory—Florida will create 432 direct, high-wage positions in its first 20 years. An additional 1,800–3,000 jobs will be created by spin-offs and ancillary businesses and activities. The Jackson Laboratory—Florida will be a division of The Jackson Laboratory and will operate under direction of its CEO and Board of Trustees. Florida management will include:

- Director, chosen for leadership in translational research, bioinformatics and/or biopharma.
- Chief Administrative/Operating Officer with extensive experience/contacts.
- Strategic Alliances Director, with experience in forming collaborations with biopharma.
- Advancement Director and general administration including facilities, HR and IT support.



Space and facilities

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Housing staff and accommodating future growth will require a world-class research facility on 30 to 50 acres of land. The ~120,000 square foot facility will house 15 bioinformatics and computational biology dry labs and up to five wet labs. In addition, the The Jackson Laboratory—Florida facility will include space for scientific services staff and administrative personnel. Scientific equipment will be “next generation” and will include high-throughput genome sequencers, as well as metabolomic and proteomic mass spectrometry. There will be a servery and dining area, along with a reception area for staff and guests. There also will be an auditorium and a conference center for educational courses and scientific symposia. Development of the facility will take a modular approach to building whereby form follows research growth and function, as needed. The Jackson Laboratory—Florida will require temporary space for a minimum of 24 months while its permanent facility is built. This space would house administrative staff, bioinformatics and computational biology faculty, and services staff. If the project proceeds on schedule, it is estimated that the temporary facility will require 12,000 to 15,000 square feet, including ~5,500 square feet of dry lab space, 3,500 square feet of office space, 2,500 square feet of science support space and 2,500 square feet of common area support space.

The Jackson Laboratory—Florida will require next-generation information technology. Massive datasets will require high-performance, scalable storage, computational capacity and networking infrastructure. The Jackson Laboratory—Florida projects close to a quarter petabyte of usable storage, more than 800 cores of high-performance computational capacity, and 10 gigabit network connectivity to Bar Harbor, as well as to high-speed national and international research networks. The permanent facility will include a data center that will offer petascale infrastructure and will scale to dozens of petabytes and tens of thousands of computational cores over 10 years, while ensuring availability and security of data commensurate with work involving human subjects.

Summary of Project Benefits

The Jackson Laboratory—Florida presents a transformational investment opportunity that is both sound and visionary. The Jackson Laboratory—Florida will position Florida as a world center for personalized medicine research, treatment and education, with a unique focus on Alzheimer’s, heart disease and diabetes. Currently, these three diseases cost Florida \$41 billion each year. The Jackson Laboratory—Florida will make research discoveries and develop innovative treatments that will significantly lower these costs.

By investing in this new institute, Florida will secure a stake in the \$452 billion personalized medicine industry—the very future of healthcare—and benefit from personalized medicine’s explosive market growth. The Jackson Laboratory—Florida will provide a robust return on investment by attracting biotechnology, pharmaceutical, research, healthcare, wellness, education and service industry organizations to the state.

This aggregation of health, research and education enterprises will create a biotechnology village that will fuel economic growth across the entire state. Indeed, The Jackson Laboratory—Florida will be the tipping point that synergizes Florida’s previous biotech investments and speeds research discoveries from bench to bedside.

Based on independent economic analysis, The Jackson Laboratory—Florida, the JAX-USF-SMH partnership and the resulting biotechnology village will bring Florida and its citizens the following benefits:

New, high-wage jobs

- 432 jobs created by The Jackson Laboratory—Florida alone over 20 years
- 1800 – 3,000 additional jobs over 20 years from spin-offs and ancillary businesses
- Salaries that are 150 percent higher than the average Florida wage

Economic development, diversification and investment opportunities

- Direct project spending of \$934 million over 20 years
- Indirect economic impact of at least \$5.2 billion over 20 years
- Up to \$129 million in state revenue over 20 years
- New health, wellness, pharmaceutical and biotechnology companies; start-ups and spin-offs; and related and support businesses clustered in and around a new biomedical village
- A stake in the \$452 billion personalized medicine market

Healthcare and educational opportunities

- A world center for Alzheimer’s, heart disease and diabetes research, education and treatment
- Research and discoveries that will lower the state’s healthcare costs (an estimated savings of \$1.5 billion over a decade for Alzheimer’s alone)
- Improved health, education, productivity and longevity for all Floridians

Best of all, The Jackson Laboratory—Florida offers an investment that will accelerate and improve the prediction, prevention, diagnosis and treatment of the deadly and devastating diseases that afflict the people of Florida. The Jackson Laboratory—Florida is the state’s opportunity to create a healthier economy and better health for all Floridians.

This project will ease human suffering and cut healthcare costs by finding better and faster ways to prevent and treat Alzheimer’s, heart disease and diabetes.

Appendix I: Location for The Jackson Laboratory—Florida

Sarasota

Sarasota is part of the thriving greater Tampa Bay region. The City of Sarasota and Sarasota County offer a well-educated workforce, a strong commercial infrastructure, ease of air and highway travel, a desirable residential location, a high quality of life and ample room for growth. Sarasota has the requisite attributes to nurture collaboration with and recruitment of research, health and biopharma partners from throughout Florida, the U.S. and the world. Sarasota is an optimal location for The Jackson Laboratory—Florida, the new biotech cluster and the JAX-USF partnership.



The University of South Florida—the key partner in The Jackson Laboratory—Florida initiative—is located in nearby Tampa. USF has strong and growing educational and clinical programs, which will both facilitate and benefit from The Jackson Laboratory—Florida focus on personalized medicine.

This specialized and relatively rare focus on personalized medicine will enable USF to recruit top students and faculty with an interest in personalized medicine into its health-related schools (Medicine, Nursing, Public Health and Pharmacy). Further, USF has a satellite campus located in Sarasota that offers many possibilities for research and education, as well as development and expansion of a new biotech cluster anchored by JAX and USF.

Sarasota’s population has topped 325,000 and grew 13.4 percent over the past decade. More than 30 percent of county residents are age 65+, and the county has the nation’s oldest population of any community with more than 250,000 people. These age demographics are similar to what the nation will be like in 10 to 20 years.

For JAX and USF, Sarasota’s demographics present an unparalleled opportunity to study and find solutions to Alzheimer’s, heart disease, diabetes and, ultimately, other diseases of aging, such as cancer. Sarasota County has long had an economic development goal of positioning its aging population as an educated and supportive clinical research test market for life sciences firms. Together, county demographics and the willingness of local leaders to actively pursue the biotech industry make Sarasota an excellent location for personalized medicine research focused on Alzheimer’s, heart disease and diabetes.

The Jackson Laboratory—Florida also will benefit enormously from a partnership with Sarasota Memorial Hospital (SMH), which will facilitate clinical research and provide immediate benefit to county patients. SMH is ranked among the top 10 public hospitals in the U.S. and has an active portfolio of ongoing clinical trials for pharma and medical device companies. Land is available adjacent to the hospital to develop a partner institution, and there is additional available land in Sarasota that would allow The Jackson Laboratory—Florida and Sarasota to expand into a world-class research and medical community.

Finally, Sarasota offers the vital advantage of a wealthy, well-educated and highly philanthropic population that is rallying behind The Jackson Laboratory—Florida and a personalized medicine biotech cluster. The Gulf Coast Community Foundation of Venice, a strong and active charitable giving organization with more than \$140 million in net assets, has offered to spearhead the project’s philanthropic campaign.

A Sarasota location will swiftly advance The Jackson Laboratory—Florida and the growing arena of personalized medicine, bringing better health and healthcare for all Floridians.

Appendix II: Why personalized medicine — and why JAX?

Humans may be alike, but we also have differences, including height, weight and hair color. Those visible characteristics are determined by our genes, which contain small differences from person to person. Our genes also determine a huge number of differences we don't see, including how we process drugs and fight disease. Genetic differences can turn a drug that is effective and safe for most people into a drug that has serious side effects or is even deadly for a few.

To solve this problem, we need therapies tailored to our individual genetic differences, or *personalized medicine*. A few personalized therapies exist already, such as the breast cancer drug Herceptin and its companion diagnostic HER2. And there will many more to come as scientists learn how genetic programming contributes not only to how well a drug will work, but whether it will work at all.

In this new era of personalized medicine, doctors will use each person's genomic profile to predict, prevent, diagnose and treat disease with far more precision. The result will be better health, more effective medicine and lower healthcare costs.

Medical institutions across the country are committed to putting personalized medicine into practice to ensure that patients are given the optimum therapy from the start. Nearly every major pharmaceutical development project is exploring genetic variation and its effects on the safety and effectiveness of the candidate drug. And there is abundant proof that personalized medicine will save precious healthcare dollars.

Authors of a recent study estimated that the use of a genetic test to properly dose the blood thinner warfarin (Coumadin) could prevent 17,000 strokes and 85,000 "serious bleeding events" each year and avoid as many as 43,000 emergency room visits. If the 2 million people that start taking warfarin each year were tested at a cost of \$125 to \$500 per patient, the cost savings to the healthcare system would be \$1.1 billion annually.

Three areas of technology are key to personalized medicine: 1) new tools to decode the human genome; 2) large-scale studies and sample repositories that link genetic variation to disease and therapy response; and 3) healthcare infrastructure that supports integration of research and clinical data, as well as physicians trained to track and tailor patient care according to genetic profiles.

The Jackson Laboratory—Florida will provide the crucial expertise needed to successfully address these three key areas. Together, JAX and USF have the proven ability to move valuable personalized medicine discoveries from bench to bedside to consumer, and they will attract medical, educational and corporate partners to Florida to develop and apply their discoveries.

The Jackson Laboratory—Florida will establish Florida as a world center and destination for personalized medicine focused on Alzheimer's and heart disease, and eventually on other diseases of aging, such as cancer and diabetes. Unique educational, employment and commercial opportunities arising from JAX-USF discoveries will benefit Florida citizens and will draw significant private investment, in addition to federal research funding and scientific renown. The most significant benefit is, of course, that the very latest and best healthcare will be delivered to Florida residents, with the potential to draw patients for specialized care from across the nation.

Appendix III: Additional information on JAX and partners

About The Jackson Laboratory (JAX)

Many of our most devastating and difficult-to-treat diseases are rooted in our genes. To find effective treatments and cures for these intractable conditions, we must first understand their genetic origins. For more than 81 years, The Jackson Laboratory (JAX) has been at the forefront of understanding the genetic causes of human diseases, including cancer, diabetes, Alzheimer's, heart disease, muscular dystrophy and a host of others. A nonprofit 501(c)(3) research institution, JAX has a mission to discover the genetic basis for preventing, treating and curing human disease, and to enable research and education for the global biomedical community. Its researchers seek answers to questions in genetics that are crucial to improving medicine. JAX also provides genetics education, tools and innovative research solutions to biomedical researchers around the world.

The Jackson Laboratory has:

- been the world leader in mammalian genetics research since its founding in 1929;
- 1,344 employees at its research headquarters Bar Harbor, Maine, and The Jackson Laboratory—West in Sacramento, Calif.;
- a current operating budget of \$200 million;
- 36 principal investigators leading research inquiries in cancer, computational biology and bioinformatics, development and reproductive biology, immunology, metabolic diseases and neurobiology;
- associations with 22 Nobel Prizes through its research and resources; and
- a National Cancer Institute-designated Cancer Center and National Institutes of Health centers of excellence in aging and systems genetics.

The Jackson Laboratory is at the forefront of a new era in science—a medical revolution in which care is tailored to a patient's individual genetic makeup instead of large population probabilities. JAX is positioned to make vital contributions to the development of personalized medicine—contributions that will transform healthcare in the years ahead. *The work JAX is doing today will ensure better health tomorrow for us, our children and our grandchildren.*

JAX's economic impact. The Jackson Laboratory is more than a global hub for mammalian genetics research; it is a vital economic engine for Maine and a growing force in California. In the last 15 years, the number of JAX employees has doubled to 1,344 and operating revenue has more than tripled to \$192 million. JAX is the fifteenth largest employer in Maine, and its payroll reaches 57 zip codes in nine of Maine's counties. JAX buys goods and services totaling \$75 million a year from 581 Maine companies, and although 93 percent of JAX revenue comes from out of state, it spends 85 percent of that revenue in Maine. The Jackson Laboratory brings desirable socioeconomic diversity to Maine, where community and job opportunities are limited.

Since it began selling mice in the mid-1930s, JAX has developed a unique—and highly successful—model for raising revenue from a combination of mouse sales and services and from public and private support. Last year, JAX brought in nearly \$127 million in revenue from mouse sales and services in addition to over \$52 million in public support and \$13 million in private support. The success of these three revenue streams is a direct result of the exceptional quality of the work we do.

Research, education and services. Genetics research and discovery at The Jackson Laboratory have improved countless lives. The Laboratory's research legacy includes:

- Nobel Prize-winning research into the nature of immunology that made organ transplants possible;
- the first evidence that viruses can cause cancer;
- the discovery of the existence and nature of stem cells; and
- the discovery of leptin, a key factor in weight maintenance and obesity, for which Jackson Laboratory Professor Emeritus Douglas Coleman, Ph.D., was awarded the Shaw Prize in 2009 and the Albert Lasker Basic Medical Research Award in 2010.

Recent research has provided insight into cancer stem cells and treatments for leukemia, progress with type 1 diabetes and lupus, and a breakthrough in extending mammalian life span that was selected by *Science* and *Nature* as one of the top 10 worldwide scientific achievements in 2009.

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JAX is a leader in educating the global biomedical community. Now a model for summer research programs elsewhere, JAX's Summer Student Program has mentored more than 2,000 high school and college students, including three who went on to win the Nobel Prize. Each year, JAX courses, conferences and workshops benefit more than 800 physicians, researchers and postdoctoral students. The JAX Mouse Genome Informatics (MGI) database and the JAX Mouse Phenome database are crucial resources for biomedical researchers worldwide and are viewed by millions of people each year.

JAX's resources and services help advance discoveries in human health. The Jackson Laboratory is the world leader in mouse genetics, providing vital animal models of human disease to the biomedical research community and setting the gold standard for genetic purity and health status. The Laboratory's enormous growth over the past eight decades can be attributed to the innovation and commercialization of JAX's expertise. The Jackson Laboratory's contributions include:

- characterizing more than 6,000 different strains of mice;
- distributing 2.9 million mice each year—and providing deep knowledge about them—to more than 19,000 researchers in over 50 countries through its JAX[®] Mice & Services division;
- providing a wide variety of research services to pharmaceutical, biotech and academic researchers in 50 countries;
- directing \$108 million in sales from its mice and services back into JAX scientific research.

The Jackson Laboratory is vital to the economy, diversity and strength of Maine. It is a world leader in discovering the genetic basis for preventing, treating and curing complex diseases. Its mouse models, genetics research and science education empower the work of thousands of investigators around the globe. These efforts are focused on one goal: finding solutions for cancer and other complex and intractable diseases.

About USF and USF Health

The University of South Florida (USF) ranks as a top U.S. research institution. The USF System serves more than 47,000 students and has a \$1.6 billion annual budget, with an annual economic impact of \$3.2 billion. With more than 15,600 faculty and staff, USF offers 233 degrees, from bachelor's to doctorate.

Over the last decade, USF has pursued an aggressive strategic initiative to dramatically increase its research funding and stature among major research universities. In 2009-10, USF received more than \$390 million in external awards, making it the fastest growing university in federal expenditures in the U.S.

USF created USF Health as an enterprise dedicated to improving health in the wider environment, in communities and for individuals. USF Health encompasses the colleges of Public Health, Nursing and Medicine; a School of Physical Therapy; and clinical care. This past year a College of Pharmacy was approved by the Florida legislature; USF will enroll its first pharmacy class in fall 2011. Last year, USF Health received more than \$250 million of external funding, half from federal sources. The College of Medicine received over \$230 million of that amount.

The College of Medicine has 500 full-time faculty, 480 medical students, 106 DPT students, 680 residents and fellows in 87 programs, and over 800 biomedical sciences master's and doctoral students. The college houses the Division of Bioinformatics and Biostatistics Pediatric Epidemiology Center, one of the most successful clinical research data centers in the U.S. Major affiliates of the College of Medicine include the NCI-designated H. Lee Moffitt Cancer Center & Research Institute, the James A. Haley Veterans' Hospital, Tampa General Hospital, Lehigh Valley Health Network, Shriners' Hospital for Children and All Children's Hospital.

The JAX-USF partnership will create a new, comprehensive biorepository for personalized medicine research, which, when combined with this sizeable patient population, will provide exceptional opportunities to advance personalized medicine approaches for the diseases of aging.

Access to human tissue and patient populations is vital to determining efficacy and safety of personalized diagnostics and therapeutics. USF serves Central and Southwest Florida, with a primary focus on the Tampa Bay metropolitan area, which covers 13 counties. Nearly 4.4 million people (23.5 percent of the state's residents) reside in this area, offering a deep pool of potential research participants. Additionally, USF is establishing clinical opportunities with the Villages, a retirement community in Central Florida. The Villages has a population of 85,000, with growth expected to peak at 120,000. The average age in the Villages is 65+. USF Health has unparalleled access to this large patient population, as well as to tissue

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biorepositories at several College of Medicine clinics, Moffitt Cancer Center and the Haley VA, the nation's busiest veterans hospital.

USF maintains 290 buildings on 1,779 acres, comprising over 11,300,000 square feet of teaching, research and administrative space. The 115-acre USF Research Park houses high-technology businesses and research partnerships, including labs, offices for corporate partners, a business incubator and long-term commercial investment. The Office of Clinical Research and the Clinical and Translational Science Institute provide further opportunities to support basic, translational and clinical research to benefit the The Jackson Laboratory—Florida initiative.

USF Health expects to construct a \$20 million (50,000 sq. ft.) research facility that would be available to house a portion of the JAX-USF collaborative. This facility will provide 32,000 assignable sq. ft. and will include a 4,000 sq. ft. clinical research center, 5,000 sq. ft. of classrooms, a 1,000 sq. ft. informatics/computational lab, 1,000 sq. ft. for a gene sequencing core, 4,000 sq. ft. of office and meeting space, and 17,000 sq. ft. of wet lab space. This should provide 17 laboratories that will each house a faculty member, a postdoctoral trainee, two graduate students and a research technician. Another five individuals will provide administrative and facility support, bringing the total employees in the building to 90. Medical researchers will use the new building's gene sequencing core to sequence genes to identify patterns, interactions and abnormalities, ultimately leading to personalized disease prediction, prevention, diagnosis and treatment.

About Sarasota Memorial Healthcare System

Sarasota Memorial Health Care System, an 806-bed regional medical center, is among the largest acute care public health systems in Florida. With more than 4,000 staff and 1,000 volunteers, it is one of Sarasota County's largest employers. A community hospital founded in 1925, Sarasota Memorial is governed by the nine-member elected Sarasota County Public Hospital Board. It is a full-service health system, with specialized expertise in heart, vascular, cancer, and neuroscience services, as well as a network of outpatient centers, long-term care and rehabilitation among its many programs. Sarasota Memorial is the only provider of obstetrical services and Level III neonatal intensive care in Sarasota County. Among its many achievements, Sarasota Memorial:

- outperformed most U.S. hospitals in caring for heart attack, heart failure and pneumonia patients in a nationwide government study. SMH had the lowest (best) heart attack and heart failure readmission rates of any Florida hospital included in the Centers for Medicare and Medicaid Services (CMS) report, and on a national level, ranked No. 2 out of more than 4,000 hospitals for the lowest heart attack readmission rates, eighth for heart failure readmissions and in the top 100 hospitals for lowest number of pneumonia readmissions. The July, 2010 U.S. News and World Report's "America's Best Hospitals" publication singled out SMH in an article listing the top institutions with the lowest heart failure readmission rates.
- ranks among the top 5% of hospitals in America based on its unusually low mortality and complication rates, according to a recent study reported on Forbes.com.
- was the highest-rated hospital in the Tampa Bay area and among the top hospitals in the nation according to a Consumers' Checkbook survey reported in AARP The Magazine. Just 125 hospitals made the list.

Athleticode

Athleticode provides personalized genetic testing to athletes. Athleticode tests for unique DNA codes associated with major sports injuries such as anterior cruciate ligament (ACL) rupture and Achilles tendinitis. Through its Player Report, Athleticode combines this information with personalized pre-habilitation training exercises and other personalized strategies to help athletes reduce sport injury risk and enhance performance. By collecting training numbers and information from athletes in a program called Code Nation, Athleticode will revolutionize sports by developing new strategies to improve athlete safety and performance in three major areas: 1) sport injury, 2) hydration and sport nutrition and 3) human performance.

The genetic contribution to injuries and athletic performance is recognized. However, personal and family health histories do not pinpoint the biology of injury or human performance traits. Athleticode changes this by arming the athlete with valuable genetic awareness, allowing athletes to achieve their full potential. What originally started as a research project seeking to investigate the unique genetic attributes of National Football League players has transformed into a revolutionary fitness company leveraging new developments in DNA technologies.

Appendix IV. Business plan detail, financial statements & budget narrative

The Jackson Laboratory—Florida will raise revenue by offering educational programs and scientific services, outlined in detail below.

Educational programs. JAX has conducted successful educational programs since 1929, including its famed Short Course on Medical and Experimental Mammalian Genetics, still the only course of its kind in the world. Today, JAX conducts nearly 30 courses, meetings and workshops each year, earning \$1.5 million in revenues with 1,200 participants worldwide.

As we move into the future, medical school education will demand increasing knowledge of genomics and personalized medicine. The Jackson Laboratory—Florida and USF Health are ideal partners that can teach and apply the latest developments in genomics, personalized medicine and bioinformatics for students and professionals in medicine, nursing, pharmacy and emerging health professions.

The Jackson Laboratory—Florida offers exciting opportunities for educating the next generation of research and healthcare leaders. These opportunities include creating collaborative predoctoral training programs with USF and other partners, such as Tufts University; expanding existing medical, graduate and postdoctoral programs offered by USF in partnership with JAX; launching a collaborative M.D./Ph.D. program; providing student research and biotech worker opportunities; and offering both live and online physician education.

The Jackson Laboratory—Florida also can position Florida as the nation's premier destination for education in bioinformatics and computational biology. Educational offerings in bioinformatics and computational biology will provide a revenue stream that will grow along with the exponential growth of new scientific data and the corresponding need for professionals who can decipher it.

Florida is a popular destination for healthcare and continuing medical education meetings. The Jackson Laboratory—Florida offers the perfect venue for medical, corporate and association conferences. Planned revenue-generating education activities include physician, personalized medicine and genetic counseling courses and conferences that will prepare healthcare providers to understand and clearly communicate the implications of genetic risk and disease to their patients. The Jackson Laboratory—Florida also will tap a global education market by providing Web-based learning aimed at students, scientists, professionals and healthcare providers worldwide who cannot afford the time and expense of travel to on-site meetings.

Scientific Services. The Jackson Laboratory—Florida will offer revenue-generating scientific services. These include: 1) fee-for-service bioinformatics and computational biology; expanding existing JAX[®] Mice & Services scientific services in preclinical testing; and a proposed cord blood bank, among other possibilities.

Bioinformatics and computational biology services. Today, there is a glut of scientific data being produced by high-throughput sequencing. The volume generated in coming years is expected to skyrocket as the cost of sequencing plummets and processing speed accelerates. This data boom has created a knowledge gap that is slowing research. The Jackson Laboratory—Florida will help fill this gap by offering computational biology and bioinformatics design, analysis and consulting on a fee-for-service basis.

Cord blood bank. Umbilical cord blood stem-cell-based therapies offer the potential to reverse and cure cancer, neurodegenerative and cardiovascular diseases, as well as a host of other diseases and conditions. Cord blood stem cells are **not** embryonic stem cells and are not controversial. The global cord blood stem cells market is estimated at \$4.5 billion and is projected to reach \$15 billion by 2015. The Jackson Laboratory—Florida will position Florida to capitalize on this market by establishing a cord blood bank as a source of patient-derived stem cells for future use. Revenue generated from this activity includes a one-time accession fee plus yearly storage fees.

JAX[®] Mice & Services (JMS) scientific services. The Jackson Laboratory—Florida will partner with JMS to provide preclinical testing services for biopharmaceutical companies. JMS *In Vivo* Services currently provides this support in California, where it helps pharmaceutical companies bank tumors and test drugs in individual patient tumors—a crucial first step in personalized medicine. JAX also creates new mouse models that allow pharma to re-engineer drugs with unacceptable

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toxicity. JMS scientific services revenue has grown from over \$8 million in 2004 to over \$27 million in 2010. It is anticipated that that revenues will follow an even steeper upward spike as the \$452 billion personalized medicine market increases by a projected 11 percent per year (source: PricewaterhouseCoopers).

Operating revenues

There are two main sources of revenue for The Jackson Laboratory—Florida: **grant revenue** and **service revenue**. Grant revenue (exclusive of state and county funding) is used to fund direct research efforts. The majority of this revenue comes from federal grants (through the National Institutes of Health), with the remainder coming from private foundations. Grant revenue is given for specific research and/or projects and cannot be used for anything else. Federal grants typically fund overhead costs at a predetermined rate. Service revenue comes from JAX’s commercial business lines.

Expenses

Laboratory. Our labs are broken into two general types: wet labs and dry labs. Wet labs are traditionally more capital-intensive operations and perform more hands-on experimentation and testing. Dry labs do not have a direct testing component and are more focused on computer-based algorithms and data analysis. Our plan is to grow to 15 dry labs and five wet labs in the new facility, for a total of 20 labs. Staffing in each lab is dependent upon the experience level of the Principal Investigator (PI) who is running the lab. Our staffing assumptions are in the following table:

Lab Staffing Qty	Wetlab	Drylab
Professor	5	10
Assoc Prof	4	7
Asst Prof	3	5

These staffing rates are similar to our current experience. Each lab uses general supplies, has travel and training expenses and pays professional fees. We have estimated that each wet lab needs \$23,500/year, and a dry lab needs \$10,500/year to cover these costs. Each lab will also use \$100,000 of internally provided scientific services. The overall staffing levels of the labs are shown below. Three senior professors are not shown in this staffing as they are included in the Research Administration area.

All Labs Combined	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sr. Professor	-	-	-	-	-	1.0	1.0	1.0	2.0	2.0	2.0
Professor	-	-	1.0	2.0	3.0	4.0	5.0	7.0	7.0	7.0	7.0
Assoc Professor	-	-	-	1.0	4.0	5.0	6.0	8.0	8.0	8.0	8.0
Scientific Staff	-	2.5	10.0	17.0	24.0	46.0	68.0	80.0	101.0	109.0	109.0
Total Staff Qty	-	2.5	11.0	20.0	31.0	56.0	80.0	96.0	118.0	126.0	126.0

These labs overall generate \$15.6M worth of spending in the 10th year of the operation.

Laboratory funding. The expenses of the labs are primarily funded by grants. In year 2021 we are projecting to have 51.4 percent of our direct grant expenses covered by grant funding. There are a number of reasons why lab expenses cannot be fully funded by grants:

- 1) **Transition costs:** As one grant ends and the PI is searching for new funding, or is waiting for new funding to start, he or she often requires bridge funding to keep the lab operating.
- 2) **Start-up:** Many new investigators do not have grant funding in place and need time to acquire funding. Many of their proposals require that some of the basic research already be completed. Therefore, funding is needed to get to that point.
- 3) **Personal research:** PIs can have research projects that take them in directions for which grant funding may not be available. In these cases, the research is funded by the institution.

In order to recruit and retain top-level investigators, we need to offer solutions to these funding issues. Our recruiting package offers each PI \$1.15 million in funding that can be used at his or her discretion, as well as \$350,000 of funding for capital to start the lab. We will also fund two-thirds of one postdoctoral associate and one graduate student. We will also fund 25 percent of the PI’s salary once the initial funding package of \$1.15 million has been exhausted. These costs run

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over \$150,000/year, once the lab is established and has significant grant funding. We also have assumed a 10 percent turnover rate of our PIs, and therefore are constantly incurring new start-up packages.

Scientific Services. In order to support both our scientific staff and our commercial business venture, we have created a group of departments that provides services outside the scope of what can be done inside individual labs. Many investigators prefer that these types of services are available in-house so they can access them easily. The departments created for this purpose are: Shared Equipment, Mass Spectrometry, Cord Blood Storage, High-Throughput Sequencer, High Performance Computing and Genome Analysis Consulting Services. Each of these departments has managers and a small staff for support. Services are charged out to each PI or customer.

Courses and Conferences. One of our external offerings will be a Physician Education program that offers courses and conferences. This group will increase to three employees who coordinate the programs and arrange course offerings.

Administrative expenses. In order to support PI activities, we will have a department that consists of three program directors who will recruit and mentor PIs and oversee the direction of the labs. This department also assists with grant compliance and overall management, as well as general administrative support for all PIs. We have assumed 0.6 individuals/PI in this department. Our experience has been to have 1.1 support personnel/PI.

Administration – This department consists of staffing in the table below.

Director	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
COO	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Admin Asst	0.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
HR Manager	0.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HR Staff	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Finance	0.3	1.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
IT	-	7.0	7.0	9.0	9.0	11.0	11.0	11.0	11.0	11.0	11.0
Strategic Alliance Director	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Tech Transfer	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Advancement	-	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Staff Qty	1.5	16.0	21.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0

The majority of the staff comes in the Information Technology (IT) area. Due to the nature of our lab composition—predominantly focused on dry labs—there is a significant amount of IT personnel needed. This corresponds to the ongoing capital investment in IT infrastructure, as computing and data storage needs of the PIs are significant. IT costs outside of staffing include service contracts for computer processors, storage servers, networking infrastructure, data security and disaster recovery. These costs alone grow to over \$2M in the first 10 years.

Facilities – The facility costs include staffing for Janitorial Services, Security, Switchboard/Reception, Grounds Maintenance, Safety, and Shipping and Receiving. Maintenance costs (outside of staffing) are estimated to be \$4.00 per square foot. This is a lower figure than we experience in Bar Harbor, as the newer facility is expected to have lower costs early in its existence.

Utilities – We have estimated utility costs of \$9.38 per square foot, based on local data for rates and usage.

Sales and marketing – External sales require staff to educate and promote product offerings to our customers. There will be a marketing manager for the education business unit and the cord blood business unit. There will also be four sales personnel dedicated to cord blood sales, as well as two customer service representatives. We will also require three business development staff to promote and facilitate the genome analysis service. We will spend \$250,000/year on marketing all commercial services.

PI collaboration – One of the pillars of our recruiting efforts, and our organizational business strategy, focuses on encouraging our PIs to coordinate different types of science and to translate our mouse-based science into human genetics, and also to share more information about the science to produce a better and more efficient experiment. To that end, we have committed \$1,375,000 to be used for these collaborative efforts.

Capital

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Capital costs for an independent research facility are significantly higher than comparably sized commercial office, retail or manufacturing facilities due to its complexity and the inherent structural, HVAC, electrical, mechanical, reliability, safety and security requirements, along with the need for specialized equipment and IT computing, storage and network systems. ***Typical laboratory construction costs are twice the relative cost of commercial facilities nationally.***

Construction unit pricing for the proposed 129,000 square foot The Jackson Laboratory—Florida facility is estimated at \$407/gsf (\$52.4 million). Fixed equipment is estimated to add \$1 million. Soft costs include permitting (\$3.1 million), legal and insurance requirements (\$1.2 million), project management and oversight (\$1.25 million), design fees (\$7.1 million) and estimating and general contingencies (\$8.9 million) for a total of \$21.6 million.

Additional capital equipment—IT storage, high-performance computing, active network components, scientific equipment (sequencing, mass spectrometry, cryogenic storage, glass wash and specific PI packages, along with capital renewal—contribute an additional \$55 million and \$4.5 million respectively to the proposed facility cost.

It has been assumed that leased space would be utilized for an interim facility while construction on the permanent The Jackson Laboratory—Florida site takes place. This will require an initial investment between \$3 million and \$4 million. Capital costs have been benchmarked against similar projects constructed in Florida in the last three years and are consistent with final project expenditures.

Space allocations are based on the proposed staffing and hiring plan and are supported by baseline allocations at our existing facilities in Bar Harbor. Overall net/gross space efficiencies have been estimated at 60 percent.

Statement of Operations

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Statement of Operations																				
Operating Revenue																				
Grant Revenue																				
Federal Grants	-	-	156	261	411	669	2,102	3,523	5,545	6,732	7,219	7,580	7,959	8,357	8,775	9,213	9,674	10,158	10,666	11,199
Foundation Grants	-	-	17	29	46	74	234	391	616	748	802	842	884	929	975	1,024	1,075	1,129	1,185	1,244
Indirect Cost Revenue	-	-	119	199	312	510	1,600	2,682	4,220	5,124	5,494	5,769	6,058	6,360	6,678	7,012	7,363	7,731	8,118	8,524
State/County Funding	7,375	25,720	54,089	43,350	16,622	23,718	21,047	8,078	-	-	-	-	-	-	-	-	-	-	-	-
Total Grant Revenue	7,375	25,720	54,382	43,839	17,391	24,972	24,982	14,674	10,381	12,604	13,515	14,191	14,901	15,646	16,428	17,249	18,112	19,017	19,968	20,967
Collaboration Revenue	-	-	-	-	500	2,000	3,000	3,000	4,000	5,000	6,000	6,480	6,998	7,558	8,163	8,816	9,521	10,283	11,106	11,994
Service Revenue																				
Physician Education C&C	-	-	150	150	600	900	900	900	900	900	900	1,008	1,129	1,264	1,416	1,586	1,776	1,990	2,228	2,496
Genome Analysis Consultation	-	-	-	150	1,333	1,333	2,667	2,667	2,667	2,667	2,667	2,987	3,345	3,746	4,196	4,700	5,264	5,895	6,603	7,395
Cord Blood Bank	-	-	-	-	667	1,333	3,213	3,960	4,440	5,630	5,752	6,442	7,215	8,081	9,051	10,137	11,353	12,716	14,242	15,951
Total Service Revenue	-	-	150	300	2,600	3,567	6,780	7,527	8,007	9,197	9,319	10,437	11,689	13,092	14,663	16,423	18,393	20,601	23,073	25,841
Total Operating Revenue	7,375	25,720	54,532	44,139	20,491	30,538	34,762	25,200	22,388	26,801	28,834	31,108	33,588	36,296	39,254	42,488	46,026	49,901	54,146	58,802
Expenses																				
Laboratory	-	333	1,737	2,902	4,562	7,438	10,295	12,475	14,834	15,581	15,581	16,360	17,178	18,037	18,939	19,886	20,880	21,924	23,020	24,171
Animal Care	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scientific Services																				
Total expense	-	203	1,152	2,380	3,421	4,137	4,449	4,539	4,566	4,594	4,622	5,177	5,798	6,494	7,273	8,146	9,124	10,219	11,445	12,818
Internal transfers	-	(25)	(300)	(500)	(900)	(1,200)	(1,500)	(1,900)	(2,000)	(2,000)	(2,000)	(2,100)	(2,205)	(2,315)	(2,431)	(2,553)	(2,680)	(2,814)	(2,955)	(3,103)
Net SS expense	-	178	852	1,880	2,521	2,937	2,949	2,639	2,566	2,594	2,622	3,077	3,593	4,179	4,842	5,594	6,444	7,404	8,490	9,716
Courses and Conferences	-	474	474	582	582	582	582	582	582	582	582	651	729	817	915	1,025	1,148	1,286	1,440	1,613
Total Operating Expenses	-	984	3,062	5,364	7,664	10,956	13,825	15,695	17,981	18,756	18,785	20,088	21,501	23,033	24,696	26,504	28,471	30,614	32,950	35,499
Gross Margin	7,375	24,736	51,470	38,776	12,827	19,582	20,937	9,505	4,406	8,044	10,049	11,020	12,088	13,263	14,558	15,984	17,555	19,287	21,197	23,303
Administrative Expenses																				
Research Administration	-	342	617	617	720	794	927	998	1,002	977	977	1,025	1,077	1,130	1,187	1,246	1,309	1,374	1,443	1,515
Administration	329	3,354	4,016	5,056	5,288	5,751	5,837	5,807	5,905	6,021	6,112	6,418	6,738	7,075	7,429	7,801	8,191	8,600	9,030	9,482
Facility Costs	-	732	971	1,660	1,860	1,862	1,862	1,862	1,862	1,862	1,862	1,862	1,862	2,328	2,328	2,328	2,328	2,793	2,793	2,793
Utilities	190	380	782	1,398	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,510	1,510	1,510	1,510	1,812	1,812	1,812
Sales and Marketing	-	499	592	999	1,610	1,951	2,089	2,089	2,089	2,089	2,089	2,339	2,620	2,935	3,287	3,681	4,123	4,618	5,172	5,792
Depreciation	-	1,154	2,639	4,712	6,266	7,184	7,904	8,288	8,163	8,139	8,728	8,728	8,728	9,561	9,561	9,561	9,561	10,395	10,395	10,395
Insurance	100	100	100	200	200	200	200	200	200	200	200	216	233	315	340	367	397	514	555	600
BH PI Collaboration	-	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375
Total Administrative costs	619	7,935	11,092	16,018	18,527	20,324	21,402	21,827	21,803	21,870	22,550	23,171	23,841	26,229	27,017	27,869	28,792	31,480	32,574	33,763
Net Operating Surplus	6,756	16,800	40,378	22,758	(5,700)	(742)	(465)	(12,321)	(17,397)	(13,826)	(12,501)	(12,152)	(11,754)	(12,966)	(12,459)	(11,885)	(11,237)	(12,193)	(11,378)	(10,460)
Other Operating Support																				
Gifts	100	1,175	1,250	1,475	1,800	2,125	2,450	3,025	3,600	4,175	6,900	7,245	27,607	7,988	8,387	8,806	9,247	29,709	10,194	10,704
Endowment income	26	104	520	1,046	1,580	2,124	3,194	4,541	5,133	5,476	5,567	5,659	5,752	5,847	5,943	6,041	6,141	6,242	6,345	6,450
Investment income	3	0	10	34	26	120	262	209	55	-	-	-	-	-	-	-	-	-	-	-
State/County Funding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Operating Support	128	1,279	1,779	2,554	3,407	4,369	5,906	7,775	8,788	9,651	12,467	12,904	33,359	13,835	14,330	14,848	15,388	35,951	16,540	17,154
Net Surplus	6,885	18,079	42,157	25,312	(2,293)	3,627	5,441	(4,547)	(8,609)	(4,174)	(34)	752	21,605	869	1,871	2,962	4,150	23,758	5,162	6,694

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Balance Sheet

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Balance Sheet																				
Assets																				
Cash	128	32	437	1,616	1,371	6,365	13,897	11,822	5,324	1,977	1,996	1,725	(2,865)	(2,532)	(1,374)	695	(1,232)	(2,903)	1,643	7,529
Accounts Receivable	-	-	13	25	214	294	558	619	659	756	766	858	961	1,076	1,205	1,350	1,512	1,693	1,897	2,124
Endowment	492	1,975	9,873	19,869	30,029	40,357	60,688	86,270	97,526	104,052	105,769	107,514	109,288	111,091	112,924	114,787	116,681	118,607	120,564	122,553
PPE																				
Land	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Improvements of Leaseholds																				
Building	-	2,811	2,811	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment	-	3,507	6,814	15,844	19,339	24,588	29,622	34,811	40,278	46,884	54,910	63,810	72,889	82,149	91,595	101,229	111,056	121,079	131,303	141,732
CIP	782	14,010	55,231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less Accum Depreciation	-	(1,154)	(3,793)	(5,447)	(11,713)	(18,897)	(26,801)	(35,089)	(43,252)	(51,391)	(60,119)	(68,847)	(77,575)	(87,136)	(96,697)	(106,259)	(115,820)	(126,214)	(136,609)	(147,004)
Net PPE	5,782	24,175	66,064	90,381	88,252	86,962	84,735	82,281	80,228	79,339	79,281	80,356	106,609	107,210	107,996	108,971	115,139	140,670	141,402	142,338
Ppd, Inventory and other assets	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Assets	7,402	27,182	77,387	112,890	120,866	134,978	160,878	181,993	184,737	187,124	188,811	191,452	214,993	217,845	221,751	226,803	233,101	259,068	266,505	275,544
Liabilities																				
AP and Accr Exp	26	243	393	588	697	854	981	1,060	1,158	1,193	1,198	1,342	1,503	1,683	1,885	2,111	2,365	2,648	2,966	3,322
Fund Balance	6,885	24,964	67,121	92,433	90,140	93,767	99,209	94,662	86,053	81,879	81,845	82,597	104,202	105,071	106,942	109,905	114,055	137,813	142,975	149,669
Restricted Fund Balance	492	1,975	9,873	19,869	30,029	40,357	60,688	86,270	97,526	104,052	105,769	107,514	109,288	111,091	112,924	114,787	116,681	118,607	120,564	122,553
Liabilities and Fund Balance	7,402	27,182	77,387	112,890	120,866	134,978	160,878	181,993	184,737	187,124	188,811	191,452	214,993	217,845	221,751	226,803	233,101	259,068	266,505	275,544

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Cash Flow

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<u>Sources of Funds - Operating</u>											
Grants	-	-	293	489	769	1,253	3,935	6,596	10,381	12,604	13,515
Ext Services, Net Contrib (excl depr.)	(223)	(3,136)	(2,887)	(3,912)	(2,488)	(2,340)	908	1,811	2,415	3,620	3,720
Pharma Collaboration	-	-	-	-	500	2,000	3,000	3,000	4,000	5,000	6,000
Endowment Income	26	104	520	1,046	1,580	2,124	3,194	4,541	5,133	5,476	5,567
Investment Income	3	0	10	34	26	120	262	209	55	-	-
Annual Fund Gifts	100	1,100	1,100	1,250	1,500	1,750	2,000	2,500	3,000	3,500	6,150
	(95)	(1,932)	(965)	(1,093)	1,887	4,908	13,299	18,657	24,983	30,201	34,952
<u>Use of Funds- Operating</u>											
Research Program	-	490	2,221	4,360	6,159	8,969	11,782	13,648	15,930	16,700	16,724
Indirect (excl deprec)	396	4,139	6,258	8,344	8,677	9,222	9,669	9,870	10,100	10,211	10,284
	396	4,629	8,479	12,704	14,836	18,191	21,451	23,518	26,030	26,911	27,008
Working capital - incr (decr)	974	(217)	(137)	(183)	80	(77)	137	(18)	(58)	62	5
Net operating requirements	(1,465)	(6,344)	(9,307)	(13,615)	(13,029)	(13,205)	(8,289)	(4,843)	(988)	3,228	7,939
<u>Sources of Funds - Non-operating</u>											
Gifts restricted to endowment	500	1,500	8,000	10,000	10,000	10,000	20,000	25,000	10,000	5,000	-
Endow Earnings Retained	(8)	(17)	(101)	(5)	160	328	331	583	1,256	1,525	1,717
Gifts restricted to capital	-	75	150	225	300	375	450	525	600	675	750
State and County Funds	7,375	25,720	54,089	43,350	16,622	23,718	21,047	8,078	-	-	-
	7,867	27,278	62,138	53,571	27,082	34,421	41,828	34,185	11,856	7,200	2,467
<u>Use of Funds - Non-operating</u>											
Investment in Endowment	492	1,483	7,899	9,995	10,160	10,328	20,331	25,583	11,256	6,525	1,717
Purchase of Capital	5,782	19,546	44,528	28,781	4,138	5,894	5,677	5,834	6,110	7,250	8,670
	6,274	21,029	52,427	38,777	14,299	16,222	26,008	31,416	17,366	13,775	10,387
Change in Funds Available	128	(96)	404	1,179	(245)	4,994	7,531	(2,074)	(6,498)	(3,347)	19
Cash Balance at Year End	128	32	437	1,616	1,371	6,365	13,897	11,822	5,324	1,977	1,996