Frequently Asked Questions

1. What is Human Longevity Inc.?

Human Longevity Inc. (HLI) is a genomics-based, technology-driven company creating the most comprehensive database of whole genome, phenotype and clinical data. HLI is developing and applying large scale computing and machine learning to make novel discoveries to revolutionize the practice of medicine. We are enabling pharmaceutical companies, insurers and healthcare providers to impact and improve health.

2. Who are your founders?

J. Craig Venter, PhD, Robert Hariri, MD, PhD, Peter Diamandis, MD, who are leaders in genomics, stem cell therapeutics and business.

Dr. Venter, the pioneer in genomics, is Chairman and CEO for HLI. Venter also heads the not for profit, J. Craig Venter Institute and the privately held company, Synthetic Genomics Inc.

Dr. Hariri, a leading stem cell researcher and innovative entrepreneur, is serving as Vice-Chairman and Co-Founder. Hariri currently serves as founder, chairman and chief scientific officer of Celgene Cellular Therapeutics.

Dr. Diamandis, a serial entrepreneur in a diverse array of areas and also founder of the XPRIZE Foundation, leads HLI’s business strategy, also serving as Vice-Chairman and Co-Founder.

3. Explain your business model.

HLI is building a strong portfolio of products and services across multiple markets and application areas. Our customers include: pharmaceutical and biotechnology companies, large academic centers, hospitals, insurers, physicians and patients.

Our core areas of business include:

- **Information Generation and Discovery** – HLI is building the world’s largest human genome sequencing center, enabling all HLI product offerings and allowing the company to sequence samples from collaborators across multiple industries. We are focused on high-quality samples with genomic and phenotypic data. Our discovery team includes: streamlining drug development, discovery of biomarker and companion diagnostics, and rescuing/repurposing drugs from failed clinical trials.

- **The HLI Database and Knowledgebase™** — HLI is building the world’s largest database of clinical, biological and behavioral information. The Knowledgebase™ is HLI’s comprehensive genome and phenotype database curated with our proprietary computational tools by the
leading experts in the field. Our team is sequencing complete genomes to 30x coverage and is on track to have a database of 1 million integrated health records by 2020.

**Genome Analysis** – Our whole genome sequencing and analysis provides an integrated assessment of health status and potential risks for individuals and families. Our work supports both predictive, preventive and personalized care, including Cancer analysis, Integrated Health analysis, Newborn Screening and Rare, undiagnosed diseases.

**HLI Health Nucleus** — These first-of-their-kind, genomic-enhanced health centers are designed to be free-standing venues providing longevity care to individuals. The Health Nucleus will give individuals one-stop access and virtual support from the most advanced genomics based health evaluation and longevity service. The first HLI Health Nucleus is slated to open in fall 2015.

**Personalized Vaccines and Therapies** – Through database analysis and the collaboration of our genome discovery and bioinformatics teams, HLI is working towards cancer vaccines and cell therapies that are tailored to individual conditions.

4. **What are the company’s revenue strategies and potential?**

The market for healthy human longevity is enormous. Globally, total healthcare expenses run over $7 trillion, with nearly half of these funds being spent in the senior (65+) years of a person’s life to help keep them alive longer.

Revenue streams include information generation and discovery of novel diagnostics and therapeutics developed internally or through partnered programs; database licensing to pharmaceutical, biotechnology, insurance companies, hospitals, and academic organizations; sequencing and diagnostic services; genome analysis; services provided through the HLI Health Nucleus; and personalized vaccines and therapies.

5. **Is the company focused on particular disease areas?**

Obviously the key to longevity is remaining healthy and staving off diseases such as cancer and heart disease. At HLI, we are focusing on comprehensively understanding human health and disease through complete biological analysis of individuals. We have collaborations looking at specific disease cohorts such as Alzheimers and diabetes, and we have programs in cancer and are working toward cancer vaccine development.

6. **Does the company have any commercial deals?**

Yes, HLI signed a multi-year agreement with Genentech, a member of the Roche Group, to conduct whole genome sequencing of tens of thousands of de-identified samples. HLI, using proprietary tools and unique expertise, will sequence genomes to 30x coverage and analyze the data. Financial details of the agreement were not disclosed.
Also, Personal Genome Diagnostics, Inc. (PGDx) and HLI signed a cancer genomics agreement, where HLI licenses PGDx’s suite of cancer solutions to expand the company’s cancer genomics offering, and HLI will perform whole genome sequencing for PGDx.

HLI has announced a relationship with Metabolon Inc., the world leader in the field of metabolomics, developing and patenting the industry’s leading biochemical biomarker discovery and profiling platform. Metabolon has developed the technology to quickly identify and measure the biochemicals in a biological sample through its proprietary global processing method.

HLI is currently negotiating several alliances with companies in the genomic and stem cell arenas, targeting pharmaceutical companies, biotech and the insurance industry. The company is also in discussions with large hospital systems and clinics that will utilize our services.

7. Will you be collaborating with academic clinical centers?

Yes.

HLI has several ongoing agreements with major global academic centers. The company signed a collaborative research agreement with the University of California, San Diego working first with their Moores Cancer Center to develop protocols and procedures to enable whole genome, microbiome and/or tumor sequencing and analysis of all consenting UC San Diego research patients. The goal is to analyze, utilize and share the data generated with the hopes of enhancing diagnostic abilities and improving patient outcomes.

HLI and Cleveland Clinic established a broad collaboration agreement in human genomics to first sequence and analyze blood samples from Cleveland Clinic’s GeneBank study of de-identified patients. The two organizations will apply whole genome, cancer and microbiome sequencing focusing on a subset of samples with the goal of discovering novel disease genes and disease pathways associated with heart disease.

HLI is also pursuing work with other academic clinical centers in a variety of disease areas.

8. How much capital has HLI raised and will you be raising more?

The company is currently raising funds in its Series B round which is scheduled to close in early fall 2015. The company raised just over $80 million in capital in our Series A, which closed last summer, from a select group of private individuals and strategic investors.

9. Who are your investors?

Our investors represent a diverse group of individuals and companies who share our common goal and passion of changing healthcare, tackling the diseases of aging, and extending the healthy human lifespan.
10. Who is on your Board of Directors?

The Board of Directors includes HLI’s three co-founders, Drs. Venter and Diamandis, as well as KT Lim, Bryan Johnson, Brett Blundy, Steve Brooks, and Annie Hazlehurst. Please see http://www.humanlongevity.com for more information.

11. Who is on your Advisory Boards?

HLI’s advisors include experts from a variety of disciplines, including science, medicine, academia and business. Please see http://www.humanlongevity.com/about/advisory-board/ for more information.

- David Brenner, MD – Vice Chancellor, Health Sciences, UC San Diego
- James Brewer, MD, PhD – Chief Medical Advisor and Board of Directors, CorTechs Labs, Inc., and Associate Professor of Radiology and Neurosciences, UCSD
- C. Thomas Caskey, MD, FACP, FRSC – Professor of Molecular and Human Genetics at Baylor College of Medicine
- Ezra Cohen, MD – Professor of Medicine, UC San Diego
- Toby Cosgrove, MD – CEO Cleveland Clinic
- Anders Dale, PhD – Professor of Radiology, Neuroscience, Psychiatry and Cognitive Science, UCSD, Director of UCSD Center for Translational Imaging and Personalized Medicine, and Founder of CorTechs Labs, Inc.
- Mark Ellisman, PhD – Professor of Neurosciences & Bioengineering, UC San Diego
- Larry Goldstein, PhD – Professor of Cellular and Molecular Medicine, UC San Diego
- Danny Hillis, PhD – Co-Founder of Applied Minds
- Samuel Klein, MD – Professor of Medicine & Nutrition, Washington Univ., St. Louis
- Ray Kurzweil, Inventor and Author, a Director of Engineering of Google
- Scott Lippman, MD – Senior Associate Dean and Associate Vice Chancellor for Cancer Research and Care, UC San Diego
- Eugene “Gene” Myers PhD – Director, MPI of Molecular Cell Biology and Genetics, Dresden, Germany
- George Poste, DVM, PhD – Professor of Health Innovation, Arizona State University
- Richard Scheuermann, PhD – Professor, Director of Informatics, J. Craig Venter Institute and Adjunct Professor, Department of Pathology, UC San Diego
- Mark H. Skolnick, PhD – Co-founder and retired Chief Scientific Officer, Myriad Genetics, Inc.
- Human Longevity Cellular Therapy (HLCT) Advisor: Arnold I. Caplan, PhD – Professor of Biology, Director of the Skeletal Research Center, Case Western Reserve University
12. Who are the people on your executive management team?

- J. Craig Venter, PhD – Co-Founder, Executive Chairman, CEO
- Robert (Bob) Hariri, MD, PhD – Co-Founder, President, Human Longevity Cellular Therapeutics
- Mark Winham – Chief Operating Officer
- Brad Perkins, MD, MBA – Chief Medical Officer
- Yaron Turpaz, PhD, MBA – Chief Information Officer
- Franz Och, PhD – Chief Data Scientist
- Fernanda Coehlo, MBA – Head of Business Development
- Jill Westman Mullen – SVP, Investor Relations
- William Biggs, PhD – Head of Genomic Sequencing
- Karen Nelson, PhD – Head of Microbiome Area
- Steven French, MBA – Head of Technology Development
- Kurt Oreshack – General Counsel

13. What is your relationship with the J. Craig Venter Institute (JCVI)?

Dr. Venter is Founder and CEO of JCVI. HLI has established a broad collaboration and research services agreement with the J. Craig Venter Institute (JCVI). HLI is also licensing intellectual property from JCVI.

14. Will HLI be using embryonic stem cells or adult stem cells in its research?

HLI is focused on development of cell-based therapeutics to address age-related decline in endogenous stem cell function. The company licensed a placental stem cell line from Celgene Cellular Therapeutics and is designing Phase 2 studies for a variety of anti-aging indications including sarcopenia (loss of muscle).

The company will be utilizing both types of stem cells since both are important for a variety of research and development programs. Embryonic stem cells are typically isolated from placenta or cord blood. Adult stem cells come from bone marrow or adipose (fat) tissue.