

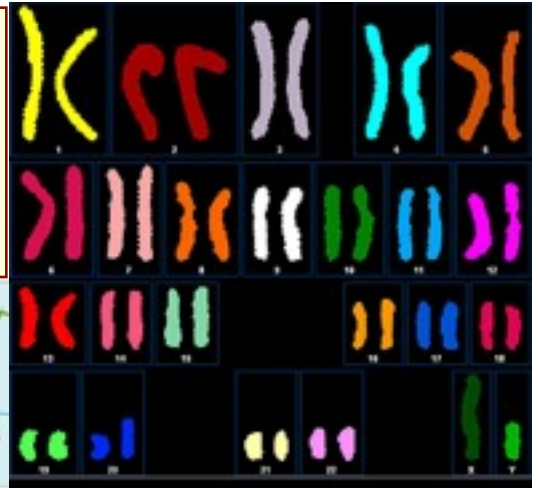


I W C Newsletter

Concord House, 1407 Chapala St., Santa Barbara, CA 93101
 www.worldculture.org



*“To live, to err, to fall,
 to triumph, to recreate
 life out of life.”
 - James Joyce*



J. Craig Venter – Genomic Explorer

Many are referring to the 21st century as the century of the life sciences. Recent advances achieved since the millennium have opened new doors that are leading us to important new discoveries and achievements. Pivotal to genomic exploration is the scientist, J. Craig Venter.

On May 20th, 2010, Venter said, *“We’re here today to announce the first synthetic cell. This is the first self-replicating cell we’ve had on the planet whose parent is a computer.”* This breakthrough is the culmination of a 15-year quest.

Venter is best known for his work in mapping the human genome a decade ago through the use of advanced algorithms and computing techniques. In 2007, his team mapped the complete diploid human genome of a single individual. This allows scientists to view both sets of an individual’s chromosomes (one inherited from each parent), as well as the analysis and assembly of the 2.9 billion base pairs of human DNA. Scientists now know that there are five to seven times greater human-to-human genetic variation than previously thought. It is this kind of genome sequencing and analysis that has the potential for highly individualized medicine and disease prevention.

Armed with this newfound knowledge, the team replicated an existing genome of the bacterium *Mycoplasma mycoides* in a computer. *They digitally replicated the complete genome.* Venter refers to this process as ‘digital biology.’ Once digitized, they had to figure out a way to chemically replicate the genome using, Adenine, Thymine, Guanine, and Cytosine, which make up the DNA in living organisms. Then, they would (Continued on page 3)

Theme for 2010: Pioneers of World Culture
 Aim 3. To honour through appropriate observance the contributions of men and women of all ages to world culture — Declaration of Interdependence

UPCOMING EVENTS



J. Craig Venter: Genomic Explorer

Lecture & Discussion:

Saturday, November 13

4:00 - 5:30

Concord House, 1407 Chapala St.

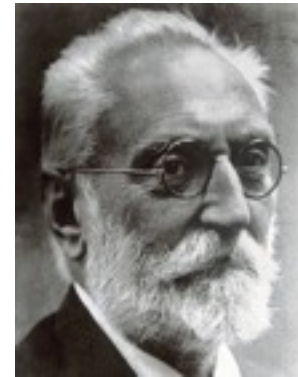
Santa Barbara

Speaker: Russ Lewin

In 2000, Dr. Craig Venter led the first science team to **map the human genome** using new tools and techniques. Since that time, Dr. Venter has extended his research to include **mapping the genome of the ocean – environmental genomics**. Collecting microbe samples aboard his research vessel, the *Sorcerer II*, Dr. Venter is mapping the genomes of the microbes that live in the ocean and account for over ½ of the biomass on earth - compared with animals that account for only 1/1000th. He refers to our biodiversity as *the planet's greatest treasure*. The oceans are almost completely unexplored.

In 2010, Dr. Venter and his team **created synthetic DNA that was booted up in a living cell**. This landmark achievement is being used to create new organisms to make useful products like vaccines and biofuels. In response to these breakthroughs, President Obama has asked the White House bioethics commission to complete a study on the issues raised by **synthetic biology**.

We will seek to understand these new breakthroughs in science and their possible implications. Dr. Venter's work has opened a new door that has the potential to deepen our understanding of chemistry and physiology. Dr. Venter said, "This is a philosophical advance as much as a technical advance."



Universality from the Perspective of Miguel de Unamuno

Seminar: Saturday, November 20

2:00 - 5:00 Concord House,

1407 Chapala St.

Santa Barbara

Speaker: Cliff Tillotson

"To achieve the impossible, attempt the absurd."

A modern day Spanish Socrates, Miguel de Unamuno (1864-1931) throws us back upon ourselves to fearlessly struggle with the Big Questions of Life. Come plunge into the dynamic life, paradoxical mind, and powerful heart of this genuine and quixotic Spaniard called by his contemporaries, "The Awakener".

No Spanish voice was heard during the fifty years of his active intellectual life which could compare with his in the strength of his passion nor in the profound seriousness with which he challenged every complacency, whether of literature, politics, or philosophy. He was primarily a nonconformist, a spiritual rebel in the tradition of the great heretics: a searcher for the truth that was not rational, but of the living sort which man has to find within himself.

– Angel Del Rio

No figure in modern literature has been more personal than Miguel de Unamuno, and yet there is no personality more difficult to define and assess. He himself disliked easy classifications: he was a philosopher and poet, a novelist and a teacher, an essayist and political prophet, but above all, he was the incarnation of his country, one whose consciousness was 'a Spanish consciousness', made in Spain. – William Jay Smith in *The New York Times*

J. Craig Venter

transplant this newly created chromosome into an existing cell (*Mycoplasma capricolum*), have it remove the existing chromosome, transform the living cell according to the newly implanted chromosome, and then replicate itself.

Although this may sound simple in theory, it had never been done before. This is different from the process of genetic engineering. Genetic engineering has to do with modifying a small number of genes in an existing genome. Venter's process has to do with the recreation of an *entire genome – digitally*, and its transplantation into a living cell. The process is both ingenious and complicated; therefore, it will be discussed in greater depth at the lecture.

According to Venter, *“Genome transplantation was the first essential enabling step in the field of synthetic genomics as it is a key mechanism by which chemically synthesized chromosomes can be activated into viable living cells.”*

According to team member Dr. Hutchinson, *“To me the most remarkable thing about our synthetic cell is that its genome was*

designed in the computer and brought to life through chemical synthesis, without using any pieces of natural DNA. This involved developing many new and useful methods along the way.”

Of course, many questions have arisen now that we have discovered this new biological power. What could it be used for? Is it safe? What are the potential dangers?

Some of the key uses for this new biology have to do with the creation of vaccines, pharmaceuticals, fuels, foods, environmental remediation, and new materials. The population of the planet is expected to grow to 9 billion people by the year 2050 – nearly a 50% increase from today's population. Venter argues that it will take scientific assistance to safely deal with the needs and problems of the growing population.

Several studies have been done regarding the ethics of the new science, and these studies are ongoing.

II. The Voyage of the Sorcerer II

*“To strive, to seek, to find,
and not to yield.”*

~ Alfred Lord Tennyson

In addition to the work already completed on mapping the complete diploid human genome and

the creation of the first successful synthetic cell, Venter is now mapping the genome of the ocean and the atmosphere of our planet – a newly burgeoning field called *Metagenomics*. He is sailing around the world and taking water samples every 200 miles. Using shotgun sequencing, he is collecting microbe samples and mapping their genomes. The team has already discovered millions of new genes. Of particular interest are the genes they discovered in microbes that can convert sunlight directly into a kind of electrical energy, which is different from photosynthesis.

They discovered that the ocean is not a giant homogeneous pond. In fact, the genomes of the microbes that they sampled differ by 85% every 200 miles. Apparently, every area of the ocean is distinctive and different from all other areas.

Investigations of the atmosphere and the earth are revealing an equally surprising depth and diversity of organisms and new genes.

More about Venter, genomics, synthetic cells, the voyage of the Sorcerer II - its discoveries and possible applications - will be discussed during the lecture at the Institute on November 13th @ 4:00p.m.

*Onward!
Russ Lewin*

In November

Anniversaries

- 2nd George Boole, British mathematician, logician b. 1815
 3rd Vilhjálmur Stefánsson, Icelandic explorer b. 1879
 4th Will Rogers, Cherokee-American humorist, actor b. 1879
 7th Marie Curie, Polish physicist, chemist, twice Nobel laureate, b. 1867
 8th John D. Scotus, Irish theologian, philosopher d. 1308
 8th Edmond Halley, English astronomer, mathematician, discoverer of Halley's Comet b. 1656
 10th Martin Luther, German monk, theologian, reformer 1483
 10th Johann Schiller, German poet, dramatist, philosopher 1759
 11th Fyodor Dostoevsky, Russian novelist b. 1821
 11th Maulana Abdul Kalam Azad, Muslim scholar, political activist, co-worker with Gandhi in the movement for Indian Independence b. 1888
 12th Elizabeth Cady Stanton, American social activist b. 1815
 12th August Rodin, French sculptor b. 1840
 14th Charles Lyell, Scottish geologist b. 1797
 14th Jawaharlal Nehru, Indian statesman, first Prime Minister of India b. 1889
 15th William Herschel, German-born British astronomer b. 1738
 17th Catherine the Great, Empress of Russia d. 1796
 17th Jacob Boehme, German Christian mystic, theologian d. 1624
 24th Benedict Spinoza, Dutch philosopher b. 1632
 28th William Blake, English poet, painter, mystic 1757
 28th Friedrich Engels, German social scientist, philosopher b. 1820
 30th Mark Twain (Samuel Clemens), American humorist, author b. 1835
 30th Jonathan Swift, Anglo-Irish author, cleric b. 1667

Observances and Acknowledgements

- 1st All Saint's Day, a religious holiday honoring Christian saints
 1st Michelangelo's Sistine Chapel paintings first exhibited to the public in 1512
 1st (2010) Día de los Muertos celebrated in Mexico, Spain, Brazil and other countries as a day for honoring the dead
 4th Egyptian King Tutankhamen's tomb discovered 1922
 5th (2010) Deepavali, Hindu and Jain festival of lights, celebrated annually
 8th French museum "Louvre" was opened to the public in 1793 (con't. p. 5)

On November 20th, Cliff Tillotson will give a seminar on Miguel de Unamuno, a most extraordinary thinker and writer. Join us at Concord House from 2:00 - 5:00 pm to learn more about this nonconformist and spiritual rebel.

Tragic Sense Of Life

Miguel de Unamuno

The most tragic thing in the world and in life, readers and brothers of mine, is love. Love is consolation in desolation; it is the sole medicine against death, for it is death's brother.

To love with the spirit is to pity, and he who pities most loves most. Men aflame with a burning charity towards their neighbors are thus enkindled because they have touched the depth of their own misery, their own apparentiality, their own nothingness, and then, turning their newly opened eyes upon their fellows, they have seen that they also are miserable, apparential, condemned to nothingness, and they have pitied them and loved them.

Man yearns to be loved, or, what is the same thing, to be pitied. Man wishes others to feel and share his hardships and his sorrows. The roadside beggar's exhibition of his sores and gangrened mutilations is something more than a device to extort alms from the passer-by. True alms is pity rather than the pittance that alleviates the material hardships of life. The beggar shows little gratitude for alms thrown to him by one who hurries past with averted face; he is more grateful to him who pities him but does not help (Continued on page 5)

Tragic Sense Of Life

than to him who helps but does not pity. Observe with what satisfaction he relates his woes to one who is moved by the story of them. He desires to be pitied, to be loved.

According as you turn inwards and penetrate more deeply into yourself, you will discover more and more your own emptiness, that you are not what you would wish to be, that you are, in a word, only a nonentity. And in touching your own nothingness, in not feeling your permanent base, in not reaching your own infinity, still less your own eternity, you will have a whole-hearted pity for yourself, and you will burn with a sorrowful love for yourself—a love that will consume your so-called self-love, which is merely a species of sensual self-delectation, the self-enjoyment, as it were, of the flesh of your soul.

Spiritual self-love, the pity that one feels for oneself, may perhaps be called egotism; but nothing could be more opposed to ordinary egoism. For this love or pity for yourself, this intense despair, bred of the consciousness that just as before you were born you were not, so after your death you will cease to be, will lead you to pity—that is, to love—all your fellows and brothers in this world of appearance,

these unhappy shadows who pass from nothingness to nothingness, these sparks of consciousness which shine for a moment in the infinite and eternal darkness. And this compassionate feeling for other men, for your fellows, beginning with those most akin to you, those with whom you live, will expand into a universal pity for all living things, and perhaps even for things that have not life but merely existence. That distant star which shines up there in the night will some day be quenched and will turn to dust and will cease to shine and cease to exist. And so, too, it will be with the whole of the star-strewn heavens. Unhappy heavens!

In order to love everything, in order to pity everything, human and extra-human, living and non-living, you must feel everything within yourself, you must personalize everything. For everything that it loves, everything that it pities, love personalizes. We only pity—that is to say, we only love—that which is like ourselves and in so far as it is like ourselves, and the more like it is the more we love; and thus our pity for things, and with it our love, grows in proportion as we discover in them the likenesses which they have with ourselves. Or rather, it is love itself, which of itself tends to grow, that reveals these resemblances to us. If I am

moved to pity and love the luckless star that one day will vanish from the face of heaven, it is because love, pity, makes me feel that it has a consciousness, more or less dim, which makes it suffer because it is no more than a star, and a star that is doomed one day to cease to be. For all consciousness is consciousness of death and of suffering.

Consciousness (*conscientia*) is participated knowledge, is co-feeling, and co-feeling is com-passion. Love personalizes all that it loves...We personalize the All in order to save ourselves from Nothingness; and the only mystery really mysterious is the mystery of suffering.

Suffering is the path of consciousness, and by it living beings arrive at the possession of self-consciousness. For to possess consciousness of oneself, to possess personality, is to know oneself and to feel oneself distinct from other beings, and this feeling of distinction is only reached through an act of collision, through suffering more or less severe, through the sense of one's own limits. Consciousness of oneself is simply consciousness of one's own limitation.

Our own struggle to acquire, preserve, and increase our own consciousness makes us discover in (Continued on page 6)

Tragic Sense Of Life

the endeavors and movements and revolutions of all things a struggle to acquire, preserve, and increase consciousness, to which everything tends...And the evolution of organic beings is simply a struggle to realize fullness of consciousness through suffering, a continual aspiration to be others without ceasing to be themselves, to break and yet to preserve their proper limits.

And this process of personalization or subjectivization of everything external, phenomenal, or objective, is none other than the vital process of philosophy in the contest of life against reason and of reason against life.

Chapter VII: LOVE, SUFFERING, PITY AND PERSONALITY

Contributed by Cliff Tillotson

IWC Program for 2011

Next year's Institute of World Culture Programs will be related to Aim # 9 from the *Declaration of Interdependence*:

"To assist in the emergence of men and women of universal culture, capable of continuous growth in non-violence of mind, generosity of heart and harmony of soul."



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PRISM ONLINE COMMUNITY CALENDAR

PRISM lists member-recommended community events of interest on the IWC website. Please e-mail suggestions to donna@worldculture.org.

For inquiries about the newsletter, contact gerry@worldculture.org.



Looking Ahead

Holiday Reception

Saturday,
December 18,
7:00 - 9:30 pm
Concord House

In November

Observances and Acknowledgements

- 8th X-rays discovered by Wilhelm Roentgen in 1895
- 10th Analytic geometry introduced by René Descartes 1637
- 14th-18th (2010) The Hajj, annual pilgrimage to Mecca, the largest annual pilgrimage in the world and the fifth pillar of Islam
- 16th International Day of Tolerance first declared by UNESCO in 1995
- 17th 14th Dalai Lama enthroned in 1950 at age 15 as Tibet's head of state
- 17th Suez Canal opened in 1869 connecting the Mediterranean and the Indian Ocean through the Red Sea allowing direct water transportation between Europe, Southeast Asia and the Far East.
- 19th Gettysburg Address delivered in 1863 by Abraham Lincoln, the 16th U.S. President
- 20th Universal Childrens' Day first adopted by the U.N. General Assembly 1954
- 24th Charles Darwin's On the Origin of Species published in 1859
- 27th Thanksgiving Day celebrated in the U.S.
- 28th Royal Society first met in London, England in 1660