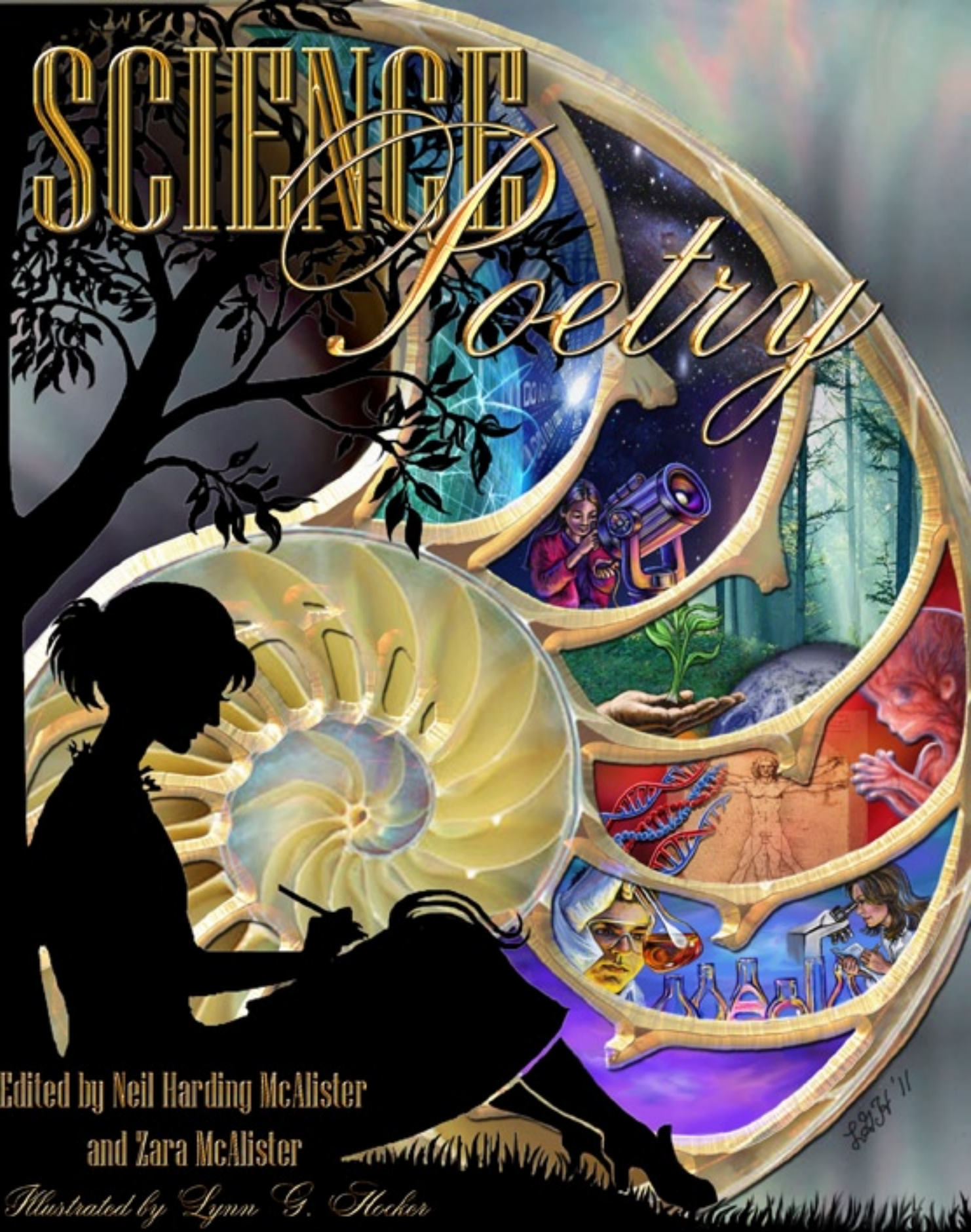


SCIENCE

Poetry

Edited by Neil Harding McAlister
and Zara McAlister

Illustrated by Lynn G. Hocker



Science Poetry

Edited by

Neil Harding McAlister

and

Zara McAlister

Illustrated by

Lynn Hocker

Science Poetry

Published by:

McAlister, Neil Harding
11 Island View Court
Port Perry, Ontario, Canada
L9L 1R6

www.durham.net/~neilmac/travelerstaes.htm

Digital set-up by Jean Taylor

Titles published by McAlister, Neil Harding:

New Classic Poems: Contemporary Verse That Rhymes, 2005.
Rhyme and Reason: Modern Formal Poetry, 2006.
Poetry for Big Kids, 2008.
Science Poetry, 2011.

© 2011 Neil Harding McAlister. All rights reserved. The copyright of each poem in this collection is owned by its author. By written agreement, poets have assumed personal responsibility for the original authorship and clear copyright ownership of the works that bear their names. No part of this book may be reproduced or transmitted in any form or by any electronic or mechanical means, including digital information storage and retrieval devices and systems, without prior written permission of the publisher and the copyright owner(s), except that brief passages may be quoted, with attribution, for reviews or for scholarly purposes.

Published and printed in Canada.

ISBN 978-0-9737006-3-3

Preface

Following publication of our three previous collections of contemporary poetry by living authors, in this book we turn our attention to *Science Poetry*, poems inspired by the world of science. We have long believed that the habitual, dichotomous distinction between the Arts and the Sciences is not merely artificial and fatuous, but harmful in contemporary society. It is self-evident that the scope of human knowledge is too vast to enable modern people to be experts in all fields of endeavor. The proverbial Renaissance Man who seemed to know everything about everything was a phenomenon of a bygone era, long before the modern world's geometric increase in knowledge and information. However, both willful ignorance of the arts by scientists, and arrogant disdain of the sciences by those who consider themselves to be artists, remain just that – ignorance. In the complex, potentially dangerous environment of the twenty first century we all are immensely dependent on the fruits of science, both good and bad. Ignorance serves no one's best interests.

As our small, personal effort to try to bridge this gap, the co-editors – the father a medical scientist, the daughter a student of the humanities and a journalist – issued a call on the Internet for poems inspired by science. Over the course of more than a year we received hundreds of poems to be considered for this project, sent in by poets from all over the world. This book contains work by gifted writers from Canada, the United States, the United Kingdom, India, South Korea, Lebanon, South Africa and Austria. Many of these authors have had work published previously; many are academics or scientists. Some famous writers honor us by their participation. We are also pleased to boast that this collection contains a humorous contribution by the most prolific poet of all time, Anonymous.

This collection represents what we consider to be an eclectic, wide-ranging and representative sample of the many works that were submitted, written in styles that range from traditional rhyming, metrical poetry, to shape poems, to free verse. As might be expected in an assemblage of contemporary poetry, free verse predominates. However, some of those writers have pushed the envelope of that genre with works that can challenge and entertain mathematicians, physicists and computer programmers.

In a project such as this one, many people deserve thanks. First we express sincere gratitude to all of the authors who contributed work to this non-profit enterprise; and who then waited patiently for more than a year to see this publication gradually come to fruition. A free copy of the book must serve as both payment and token of our thanks for their participation. Professional artist Lynn Hocker has done a wonderful job illustrating this book in her own, unique style that combines photographic, painting and digital techniques. Thanks also to Jean Taylor, who transformed the original text into a format suitable for running the printing press; and to Multitech Graphics Inc. of Whitby, Ontario, Canada for their care in printing and binding.

N. H. McA
Z. McA

Port Perry, ON, Canada
June 2011

Contents

Index of Poems	6
Science Poetry?	9
Basic Science	13
Human	31
Machine	51
Environment	69
Cosmos	91
Poets	113
Credits	126

Index of Poems

Basic Science 13

Time Dilation in an Inertial Frame, Frederick Langheim, 14
Time and Space, Gary S. Norton, 14
Statistics, Neil Harding McAlister, 15
Excursion, Carolyn A. Martin, 16
Magnetism, Barbara Crooker, 16
Blockbuster, Tracey Gratch, 17
The Vision, Boghos L. Artinian, 17
Equation of (E)motion, Steven K. Smith, 18
Nature's Numbers, Suellen Wedmore, 19
4.6692016090, Lew Watts, 20
Eight, Lew Watts, 20
Perspective, Renée von Paschen, 22
Time Line, Renée von Paschen, 22
The Anchordata of Krist II, Kane X. Faucher, 23
The Bleeping Cosmic Sandwich – a Sonnet, Torg Hadley, 24
stepping into a river, twice, Theodore Christou, 25
String Theory, Louis Gallo, 26
Upon Learning That Hearts Can Become Stones, BJ Ward, 27
Pantoum for Rosalind Franklin, Emily Kagan Trenchard, 28
Fractals, Mary Myers, 30

Human 31

New Ways, Eddie Swayze, 32
Science, Cathy Bryant, 32
Knee Replacement, Elizabeth Kerlikowske, 33
Dead Inside, Jon Reisman, 34
Hematopoesia, Frederick Langheim, 35
Headphone Madness, Patricia Gamache, 35
Every Man for Himself, Eddie Swayze, 36
The Changing Medical Profession, Lewis Gardner, 36
Survival of the Fittest, Venetia Ghozlan, 38
Tripartite Brain, David O'Neal, 39
Progress? Elizabeth Clark, 40
The Leviathan, Boghos Artinian, 41
Saikeirei – a haibun, Lew Watts, 41
Human Potential, Geoffrey Landis, 42
S.O.S., Susan Read, 42
Ascent of Man, Venetia Ghozlan, 44
Illumination, Venetia Ghozlan, 44
A Collision of Moments, Michael Johnsen, 45
Molecular Propositions, Kane X. Faucher, 46
For Science, Amy Kitchell-Leighty, 47

Calculus Class, Daniel C. Bryant, 48
Chaos of Order, Meg Eden, 49
An Accounting, Sandra Lindow, 50

Machine 51

TXt MSSGE HmLET, Barbara Crooker, 52
Time, Chad Herman, 52
Ginza Goddess, Neil Harding McAlister, 53
Radio Parts, Louis Gallo, 54
The Idiots of Tomorrow, Lee Evans, 55
Netspeak, Harvey Whitney, 56
Earphones Wires Hanging from his Ears Down his Chest,
Daniel Bogogolela, 56
A Solid State Identity, Kane X. Faucher, 57
The Hero of Gor, Neil Harding McAlister, 59
Cell phone video of the disaster, Joseph Farley, 60
Without Pay Phones, Andrea Potos, 60
Leaving the Cell Phone at Home, Andrea Potos, 61
The Devil's Bridge, JoAnn Stone, 61
Treadmill, Alvin G. Ens, 62
The Sounds of Writing, Lewis Gardner, 63
Wrest a Spell, Sauce unknown, 64
White Noise, Lewis Gardner, 65
Instant Message, Lee Evans, 66
iPhonomenon, Meredith Danton, 67
The Large Hadron Collider, Daniel Hudon, 68

Environment 69

Remainder, Lee Evans, 70
Great Things for a Great People, Daniel Hudon, 71
Biology Student, Lucille Lang Day, 72
Frisbee, Paul Hostovsky, 73
Coping with the Greenhouse Effect, Joseph Farley, 73
Courtship Dives of the Male Hummingbird, Paul Hostovsky, 74
Hometown, Robin Chapman, 76
Elegy for an Unknown Species on the Verge of Extinction,
Daniel Hudon, 77
The Inevitable Variable, Yvette A. Schnoeker-Shorb, 78
Extremophiles, Tim Kahl, 79
The Red Bloom, Tim Kahl, 80
Global Warming, Vivekanand Jha, 81
Prozac Ocean, Meredith Danton, 82
Be Natural, Cathy Bryant, 83
Seismology Report, Joseph Farley, 84
Truffle Shuffle, Tiel Aisha Ansari, 85
What the Mantis Shrimp Sees, Robin Chapman, 86

at the reversing falls, Theodore Christou, 87
Extinction, Chad Woody, 88
OBX, Allison Cummings, 89
Tsunami, 3 tanka, Chris Valentine, 90

Cosmos 91

The Most Improbable of All Worlds, Paul Barclay, 92
No Ordinary Matter, Peggy Landsman, 93
A Sky Unseen, Marc Prud'homme, 94
In Which I Call Upon Tycho Brahe, Emily Kagan Trenchard, 95
Kepler, Allene R. Nichols, 96
Solar Symphony, Christine Valentine, 97
Sunspots Explained, Art Elser, 98
Universal Kiss-Off, Peter Payack, 99
Fate of the Universe, Lucille Lang Day, 101
Space Walker, Michael Filimowicz, 102
einstein's compass, Trevor Scott Barton, 102
Misnomer, Laura Madeline Wiseman, 103
Heat Death, Louis Gallo, 105
What Wakes Me Up, Peggy Landsman, 105
The Realm of the Nebulae, Daniel Hudon, 106
Yet It Does Move, Michael Gregory, 107
the traveling salesman, Samara Golabuk Crutchfield, 108
Quasar, Geoffrey A. Landis, 108
Sunbathing, Peggy Landsman, 109
Infinities, Lucille Lang Day, 110
in the void, Joseph Farley, 111
Dark Flow, Robin Chapman, 112

Science Poetry?

Neil Harding McAlister and **Zara McAlister**

English poet Alexander Pope eulogized Sir Isaac Newton's lifetime of scientific achievement with a now-famous epitaph for the great man's tomb in Westminster Abbey:

Nature and nature's laws lay hid in night;
God said, "Let Newton be" and all was light.

The format of this fulsome tribute was unintentionally ironic, considering that Newton had once dismissed poetry as "a kind of ingenious nonsense." Pope's praise was also a slight exaggeration. From the perspective of several centuries we appreciate that major scientific advances are seldom attributable solely to the efforts of individuals, however egregious their contributions. Science is too vast - as vast as the universe - and it evolves constantly as one discovery leads to another, often in unexpected ways. Newton's insights by no means marked the end point of "all" scientific inquiry: on the contrary, they heralded a new beginning that helped to usher in the modern age. His genius opened a door for future generations of mathematicians, physicists, astronomers and other scientists who would make discoveries undreamed-of by Newton and his contemporaries.

Unlike Sir Isaac Newton, most scientists throughout history have toiled in relative anonymity. As late as the seventeenth century it was often dangerous for scientists to draw attention to themselves, as Galileo learned. (See, *Yet It Does Move*, by Michael Gregory, in this collection.) Self-promoters have sometimes aggrandized their own reputations at the expense of colleagues whose work remained unpublicized and underappreciated. Until very recent years, sexism obscured the contributions of many talented female scientists whose names remain unknown to the public even today. (See, for example, *Pantom for Rosalind Franklin*, by Emily Kagan Trenchard, also in this book.)

Philosopher Thomas Kuhn explained how great discoveries by a great genius such as Newton sometimes cause seismic paradigm shifts that trigger a scientific revolution. [1] Such revolutions are rare, however. More often, scientific knowledge advances gradually out of a growing body of what Kuhn called "normal science" - careful, incremental work by journeyman scientists, the accumulating weight of which eventually tips the balance of the status quo. In this light, most scientific progress can be viewed as the result of an ongoing, collaborative process.

By contrast, writing poetry is an intensely personal activity, usually carried out in complete isolation. What, then, has poetry got to do with science? While superficially the two fields would appear to share little common ground, in fact their association is close and surprisingly ancient. Although the best-known poetry of classical Greece concerned the exploits of gods and heroes, poetry was the usual mode of expression for any form of written, intellectual activity in those times. In the same tradition, the Roman poet

Lucretius wrote *De Rerum Natura* around 60 BC, an epic poem that was the greatest single dissertation on natural history of its era.

Even so, the idea that there exists a dichotomy between the arts, of which poetry is one branch, and the sciences is equally old. In his *Poetics*, Aristotle drew a careful distinction between the art of poetry, and science that was expressed in the form of written verse:

"... even they who compose treatises of medicine or natural philosophy in verse are denominated poets: yet Homer and Empedocles have nothing in common except their metre; the former, therefore, justly merits the name of the poet; while the other should rather be called a physiologist than a poet." [2]

Consistent with this historical division, Alfred, Lord Tennyson once complained that "Science grows and Beauty dwindles." [3] Although William Blake famously purported to see the universe in a grain of sand, he nevertheless condemned Locke, Newton and Francis Bacon together as "an unholy trinity." [4] No less a fan of nature and of science than Walt Whitman bemoaned the way in which a lecturer had described the stars in technical terms until "I became tired and sick." [5] Did Whitman really mean to imply that nature can and should be viewed separately from the natural laws that govern it?

It is not always appreciated today that the still fashionable antipathy of many of the Romantic poets towards science was something of a break with Western poetic tradition. Notable poets down through the centuries embraced science and scientific concepts in their writings. Then-current Ptolemaic theories of cosmology were integral to Dante's *Divine Comedy*, and are found also in the works of Milton. Shakespeare's plays contain many allusions to scientific discoveries of the Elizabethan age, of which one well-known example is the unique murder plot in *Hamlet*, involving poison poured into the ear. [6] Erasmus Darwin (1731-1802), an eighteenth century English physician, inventor and natural philosopher (as scientists were called in those days,) was famous in his own lifetime for writing "philosophical poetry" on scientific themes. [7] His monumental *Temple of Nature*, which resembled an ancient Greek epic, attempted to describe almost everything that was known about all of nature.

His fame was transitory, however. Almost overnight, by the beginning of the nineteenth century the entire genre of philosophical poetry had disappeared from the English literary landscape, as poets of the Romantic era expressed unease, distrust, even downright hostility towards science and all its works. Their antagonistic attitude was perhaps an understandable reaction to the frightening and seemingly incomprehensible pace of upheaval and change caused by the Industrial Revolution. At any rate, Erasmus Darwin's own grandson, the illustrious Charles Darwin, commented sadly, "Notwithstanding the former high estimation of his poetry ... no one of the present generation reads, as it appears, a single line of it." [8] Only a faint echo of Erasmus Darwin's poetic tradition is heard today: short poems about subjects relevant to medicine, often written by physicians, are published from time to time in professional journals such as *The Annals of Internal Medicine*.

Despite the efforts of scientists who possess a poetic bent, information scientist Eugene Garfield could correctly note that there has been a growing trend in the modern era to assume that the humanities (which include poetry) and the sciences are mutually exclusive. [3] This opinion had become so prevalent by the mid twentieth century that British scientist and novelist C.P. Snow decried the breakdown of communications between the "two

cultures" of modern society - the humanities and the sciences - and he castigated his country's educational system for over-emphasizing the former at the expense of the latter. [9]

Has the steady decline of "philosophical poetry" since the time of Erasmus Darwin finally reached its nadir? and if so, might we ever see a resurgence in its popularity? In our own century, the persisting schism between humanists and scientists seems to be almost willfully naïve. The artist who paints a portrait relies on the chemist who formulates the paints. Societies that want to build monumental structures, and which possess the technical expertise to do so, still requires the artistic vision of architects to give shape to nebulous, cultural aspirations. Similarly, from a societal viewpoint, writing poems is a pointless exercise unless the work has some practical means of reaching an audience. Art and science are thus inextricably interconnected. A utilitarian way of viewing this interdependency is to say that science ultimately exists to serve the needs of humankind, including our innate, human need for cultural and artistic expression. Although a lone scientist toiling in her laboratory or a poet cloistered in his study may sometimes feel otherwise, from a broader, social perspective, science is not an end in itself, and neither is art.

Combining poetry and science with seamless hilarity, the nineteenth century American journalist and satirist, Ambrose Bierce, mocked progress, poesy and pedantry all at the same time, with tongue-in-cheek Leonine verse that could be forced to rhyme only by mispronouncing some Latin words:

The electric light invades the dunnest deep of Hades.
Cries Pluto, 'twixt his snores: "O tempora! O mores!" [10]

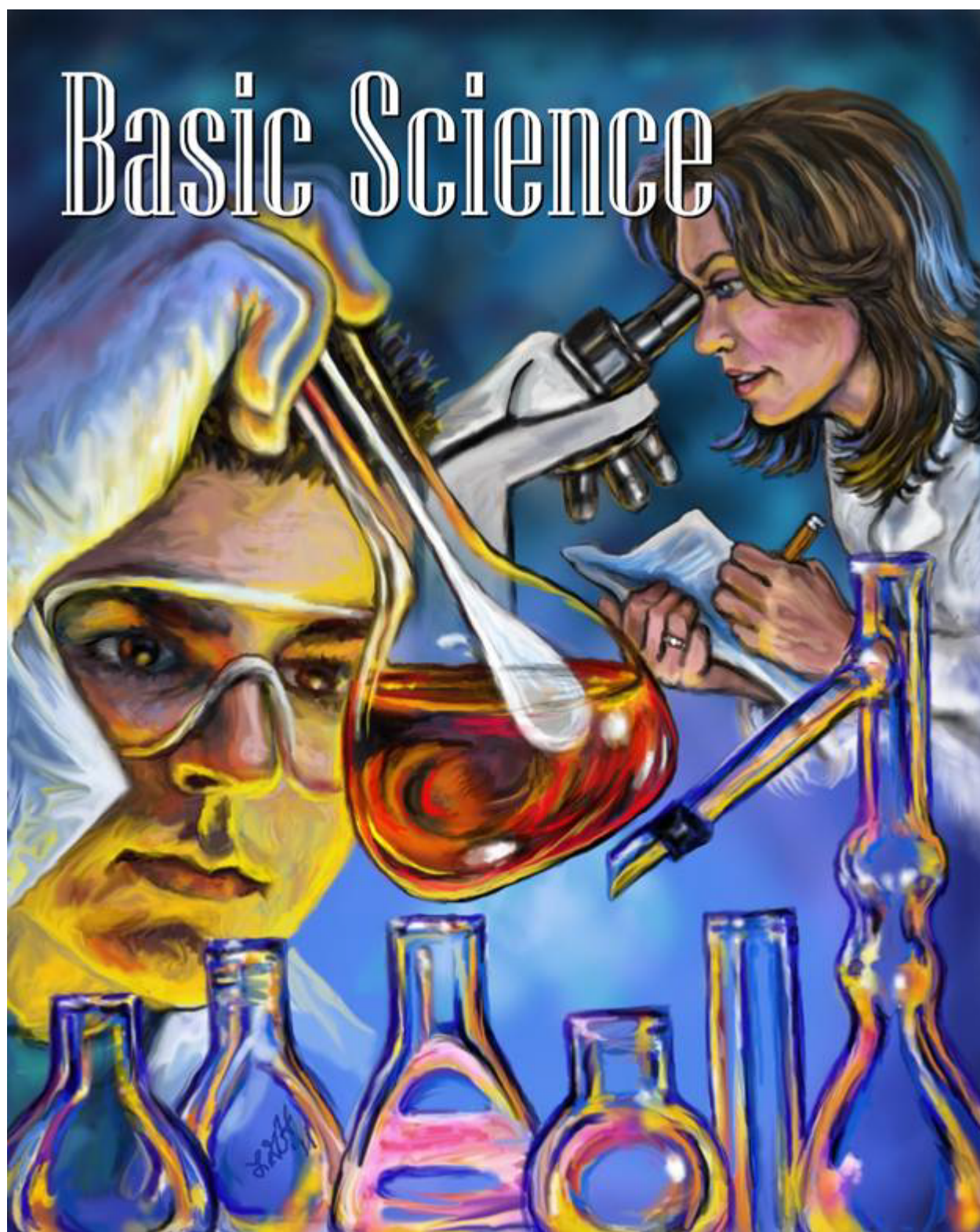
Bierce was best known as a newspaper editor and columnist whose prolific output included scraps of comical poetry which he habitually attributed to purely fictitious sources. Naturally he chose to publish many of his writings in the newspapers where he worked. It is no surprise that modern poets have likewise embraced the best technology available to themselves as the most convenient and cost-effective means for disseminating their work to the public. Nowadays, online blogs, personal web sites and e-zines such as *Science Poetry* and *Log Cabin* feature poems that deal specifically with scientific subjects.

As well as democratizing the publishing of poetry by removing once-substantial financial impediments, the Internet has also broken down the geographic barriers to publishing. This book solicited submissions world-wide through online postings, and as a result it contains works by poets from four continents. This collection is but one small effort to help repair the rickety bridge between the sometimes antagonistic worlds of science and poetry. Of course, a short essay such as this one can only scratch the surface of such a broad subject; so readers who may be inspired by this cursory introduction, and who wish to study the science-poetry connection in depth, may wish to consult any number of scholarly articles and books. [11-13]

References

[1] Kuhn, TS. *The Structure of Scientific Revolutions*. 2nd ed. Chicago: University of Chicago Press, 1962.

- [2] Aristotle. *Poetics*. Trans. by Twining, T. New York: Viking, 1957.
- [3] Garfield, E. The poetry-science connection. *Essays of an Information Scientist* 6 (1983):223-228.
- [4] Hagstrum, JH. William Blake rejects the enlightenment. (ed. Frye, N.) *Blake: a Collection of Critical Essays*. Englewood Cliffs, NJ: Prentice-Hall, 1966, pp. 142-155.
- [5] Whitman, W. *Complete Poetry and Collected Prose*. New York: Library of America, 1982.
- [6] Eden AR and Opland J. Bartolommo Eustachio's *De Auditus Organis* and the unique murder plot in Shakespeare's *Hamlet*. *N Engl J Med* 307 (1982):259-261.
- [7] Jackson, N. Rhyme and reason: Erasmus Darwin's romanticism. *Modern Language Quarterly* 70.2 (2009):171-194.
- [8] Darwin, C. *The Life of Erasmus Darwin*, ed. King-Hele, D. Cambridge: Cambridge University Press, 2003, pp. 33-34.
- [9] Snow, CP. *The two cultures and the scientific revolution*. The Rede Lecture. New York: Cambridge University Press, 1959.
- [10] Bierce, A. *The Devil's Dictionary*, 1911. Project Gutenberg, 2008.
<http://www.gutenberg.org>
- [11] Bush, D. *Science and English Poetry: a Historical Sketch, 1590 -1950*. Westport, CT: Greenwood Press, 1950.
- [12] Huxley, A. *Literature and Science*. New York: Harper and Row, 1963.
- [13] Wood, HG. *Thought, Life and Time as Reflected in Science and Poetry*. New York: Cambridge University Press, 1957.



Time Dilation in an Inertial Frame

Frederick Langheim

$\Delta x \Delta p \geq h/2\pi$ is Heisenberg's principle of uncertainty
that explains those dim stars you can only see
when you're not quite looking at them.

$F=ma$ defines force in terms of
how much it can hurt
when things happen too fast.

$E=mc^2$ says that angels travel at the speed of light
so all their mass is converted to energy
and they become lighter than any feather.

$V_f = (m_1 v_1 + m_2 v_2) / (m_1 + m_2)$ shows momentum is conserved
so father hits son hits grandson and so on.

$x_f = x_i + v_i t + \frac{1}{2} a t^2$ tells where you are going and how fast
even if you're traveling in circles.

$\Delta t = \gamma \Delta t'$ explains that time is relative
and the days speed up with age
that's why the elderly walk so slowly
they're holding on to the rails
of a spinning merry-go-round
working their way towards the center.

Time and Space

Gary S. Norton

Can there be one without the other?

Does space exist for time to experience memories? or
Does time exist for space to experience expectations?

Statistics

Neil Harding McAlister

No politician wishes to get caught
With policies opposed to public thought.
A popular position holds more sway,
So mathematics comes to save the day.
Some pollsters are retained to man the phones.
They only reach the folks who are at home;
But now he's got a survey full of notes --
A skewed opinion poll that he can quote.
And thus statistics help our leaders lead
When leading from the rear is all they need.

The world of medicine is fertile soil
For workers who in TV newsrooms toil.
A staffer scans some journals 'til she finds
An article to baffle laymen's minds,
Then takes her viewers down the garden path
Less through ill-will than ignorance of math.
This person, who is no statistics whiz,
Thinks probability translates to "is."
Her foolish talk of breakthroughs spawns false hope,
But all that hype helps sponsors sell more soap.

Now eager to advance his own career
And garner kudos from his trusting peers,
With ardent lust for academic fame
And big, fat research grants that bear his name,
A scientist pads up his resume
With guff that should not see the light of day.
His papers bulge with histograms and plots,
ANOVA, chi squared's, Student's t's -- the lot.
So what if he has analyzed with care?
His data were all fudged out of thin air!

Innumerates don't know statistics lore;
But aiding us, as in the days of yore,
A sceptic's common sense can serve us well.
It doesn't take a Ph.D. to tell
That making little thoughts seem so much bigger,
The figures may not lie -- but liars figure!

Excursion

Carolyn A. Martin

Look. When compasses point south and navigators
lose their way, the sun rings out of tune. *Shifts happen*,
we are warned, and fickle earth is overdue.

Happens all the time, chide paleomagnetists.
Poles flip, rebound as often as Ice Ages flow.
In geologic time, that's nearly once a week. So,

what precipitates catastrophes? Tsunamis,
solar flares, basalt stampedes. Drifts sending San Jose
three inches toward Japan each year. Or, closer home,

erupting words that rift a lover's dream. Beliefs
eroding peace, unstapling seams that bind us each
to each. Upheavals find a way of breaking through.

We'll wobble on the Milky Way until the sun
re-calibrates. A false alarm? Shifts in arrears?
An answer's due, perhaps, in ten thousand years.

Magnetism

Barbara Crooker

Some things attract: iron and steel
sugar and ants
finches and thistle
small boys and torn pants,

baseballs and gloves
cats, sunny windows
honeybees and clover
our bodies, their shadows,

June bugs and screens
chalk and sidewalks
sticks, picket fences
mosquitoes, bare necks,

moths and porchlights
a sock and a shoe
the left hand that takes the right
me and you.

Blockbuster

Tracey Gratch

From molecule to market in six years
would leave eleven for big profit.
Preliminary data, positive –
adverse events, side-effects, minimal.
Fast-tracked by the FDA, the benefit
would far outweigh any risk. No one knew,
(*perhaps a few, deep in the company?*)
mortality, reportedly, was double.

Proved true. Class action suits in every state,
survivors – broken-hearted – wait for payments,
reaching billions. The lawyers argue and
expose, little guys and docs deposed.
Stock falls to its lowest low. Pipeline's strong,
Holders hold; wait for the next blockbuster.

The Vision

Boghos L. Artinian

There was a soft collision—
The lymphocyte saw a vision!
It was a viral coat
Inserting its alien thought;
A thought extracorporeal
In a habit ethereal:
"The codes I hereby dictate
You must henceforth propagate,
For your seed shall multiply
And your clan shall never die!"
Having thus spoken
The coat soon disappeared
Into the cytoplasmic clouds.

Equation of (E)motion

Steven K. Smith

Let $r = f(\theta, \phi, \rho, t)$ and let r describe the world line of some person with a family, friends, hopes, et cetera... for a spherical coordinate system centered on the earth and constrained such that for all ρ , $\rho_d < \rho < \rho_u$ and $\rho_u - \rho_d < \rho_0$, the mean radius of the earth, ρ_0 . Then the instantaneous position r_i of this person is given by $f(\theta_i, \phi_i, \rho_i, t_i)$ where i represents some instant between birth at $t = t_0$ and death at $t = t_N$. Also let $q = g(\theta, \phi, \rho, t)$ be the world line of a person prone to drunk driving.

Then $\partial/\partial t (q) = v$ is the speed of q and if at $t = t_i$ $v_i = \text{too fast}$ for the conditions of the road, weather, and the time interval since his last drink and if $q_i = r_i$ then there exists a solution for the equation of motion for r at $t > t_N$ where the world line, $f(\theta, \phi, \rho, t)$, passes through a hospital, morgue, and funeral home and the brief convergence of the tear dampened world lines of family and friends before coming to a final position $r_f = f(\theta_f, \phi_f, \rho_f, t_f)$ where $\rho_f < \rho_0$ and $\rho_0 - \rho_f = \text{six feet (1.83 meters)}$.

At this point the equation of position for r becomes a constant.

Nature's Numbers

Suellen Wedmore

In Pisa, of course,
I'd seen the statue of Fibonacci:
Bigalo, they called him,

good for nothing. A diminutive man
of colossal imagination
who explained the astonishing

beauty of a chambered nautilus,
who probed with numbers
the enchantment

of da Vinci's art, Debussy's
"Afternoon of a Faun"—
one plus the square root of five

over two—each number
the sum of the two before.
Today I cradle a pineapple

in one hand, mark the spirals
from base to stem with ribbons,
trace these for a count:

1, 1, 2, 3, 5, 8, 13...,
a golden ratio
to quench a human thirst

for order, soothe an ear
attuned to chaos;
what is this

sequence if not
hypothesis as poem?

4.6692016090

Lew Watts

I am strangely attracted to the thought that the
 Feigenbaum Constant
 could bring non-linear order to my life. The way
 my hands and thighs sweat at breakfast the instant

my chaotic clock starts - I call it my butterfly
 effect - groundhogs would sigh with causal relief
 at the degrees of freedom of their own days
 within days

Have you ever noticed how young trees are relieved
 of the choice of growth by randomly budding branches
 and veins, like our own, handsomely basking in the belief

of free will, blind to Poincare's mapped chances
 in the endless search for light and life? Life
 as we know it hangs on a power law and dances

at the tenuous tips of earth's tree where it constantly writhes
 and feeds inevitable numerical forces within it.
 Perhaps Mandelbrot was right that a fractal's surface defines
 a journey, within set boundaries, that is truly infinite.

Eight

Lew Watts

Watching the way you dance *ochos*
 to Piazzolla's slow tangos
 my eyes trace the figure-of-eight
 of your steps and skirt. And I'm dazed,
 like the first time I heard Django
 Reinhardt's *Nuage* and the magical
 eighth note, perfect to the power
 of *yotta* - but a minor-7th.

Note:

In Argentinian tango, Ochos are a set steps in which the follower marks a figure-of-eight on the floor.

Yotta (Y) is the largest prefix in SI units, as in 1000⁸ (one Quadrillion)

Perspective

Renée von Paschen

What is a
perspective?

Seen from all
angles, it is

Different,

But only in
another's
perception,

And yet the same
in some ways,
as well.

Time Line

Renée von Paschen

Do we create a new
time line,

When we begin
speaking primarily

Of the
past?

Or is it
only our new

Perspective, which
misleads us?

The Anchordata of Krist II (or, P.K. Dick will build you)

Kane X. Faucher

[rec'd reading: fast at high volume, as mantra]

Work crew/cible-blithe

Mortuatara!

Lizar ars ardoretum

If gene splicing and splixing/micing in labs

Twixt two plinths or a science fugue rood

Woodslattern shatshattered

Blacknot

Equals trini-trinoleum

Abstracted from the Shroud of Tourism

As code

Equals

Tryptocryptotryptocrypto

Gene three therapy is

A genomenon!

So exclaims the one who maps the frontier of

The body

A filtered cigarette

A subway lung

Pull

Pall

Pell ancholy

The Bleeping Cosmic Sandwich – A Sonnet

Torg Hadley

The Physicists insist we are sandwiched
Amidst complex, mixed probabilities.
To observe's to fix a frequency; once, which
So done, becomes discrete Reality.

One perceives as one has predilection;
To disregard, or fully recognize,
A Concept valid, or misdirection:
To preconceive is not to realize.

Abandon all that's Known, just heave the mess!
The Mystery will lead us thread by thread
Becoming, then, a skein of Consciousness,
A Living Fabric, not graven stone-dead.

The Divine is found to be Manifest
When we seek to Learn, Hubris to detest.

stepping into a river, twice

Theodore Christou

all shall change to fire, according to primordial nature.
thereafter, exhausted, as heraclitus had predicted,
all shall be restored, renewed.

as moisture in the air drips
downwards
on the glass of windowpanes,
slipping tearfully,
following a change of matter:

so shall all change to flame
so shall all burn to ash
so shall all change again to flame,

according to nature and to presocratic thought.

we step here into flood and rushing waters;
slipping, the whole world flows by
and by. it all looks so familiar:

all the horror, the flame, the ash.

yet each quake, each flood, each fire is unique; we cannot
step into the same river, twice.

All dissolves, and all is renewed; qualitatively inimitable.

String Theory

Louis Gallo

Strings make sense. Banjo strings,
not the threads hanging from
your loose buttonhole.
We're made of music, the entire
material world, all two percent.
In those vast empty swatches
where dark matter, dark and phantom energy
roil, there you'll find the other strings,
fuzzy loose ends, the tatters
of your only shirt. Ninety-eight percent
of you is missing. Or never was.
Or cheeps in somebody else,
oozing from their buttonholes
like thin soft spikes. The cord
of a metal Venetian blind
is the saddest voice in heaven.
And don't forget that roll
of fuzzy old twine, oily, brown . . .
stored in some garage, used once
in 1952 to wrap a package.
Is there another theory?
Rivets? Alligator clips? Glue?
Music, too rare to be true.
But the math is impeccable,
Orphic, something like God.

Upon Learning That Hearts Can Become Stones

BJ Ward

In South Dakota, a dinosaur heart the size of a grapefruit is said to have fossilized into reddish/brown stone. —New York Times (April 21, 2000)

And so scientists have discovered
what bartenders have always known—
given certain conditions and exposure
to harsh elements, even the grandest of hearts
can harden. In the Badlands of South Dakota,
they have discovered not only evident, larger old hearts
but that the smaller stones were hearts too.
We step over the most insignificant ones
all the time, use them to keep shut wind-swung doors
and form perimeters around our gardens.
We imagine how a caveman used a hardened heart
to murder, bring down the blood muscle
of, say, a long-dead horse upon the skull
of someone who done somebody prehistorically wrong.
Scientists today are discovering small chambers
in the middles of cow fields and holding down
liens in law offices, half-hearts broken by prison
chain-gangs, and hearts from way out there
that burned in the night as they approached.
They have been busy identifying, scurrying to discover
the cause of why some hearts burn, others petrify,
and again the bartenders know
there is no science behind the various geologies
of the heart. So between the dried-up hearts
of fish and the dropping hearts of bats,
we walk toward our own deaths
with our own hearts, our mysteries locked
in these tiny strongboxes that somehow remain.
In the meantime we step on them, we break them,
we spread them on the drives that lead
to our houses. We print them on playing cards
and shuffle them up with spades and clubs.
We grind the softest of them to chalk
so that our schoolchildren may learn.

Pantoum for Rosalind Franklin

Emily Kagan Trenchard

You were a scientist first,
Rosalind, no matter what else they may say.
You keeper of our invisible selves,
those atoms that bind and contort like family.

Rosalind, no matter what else they may say
it was you who pointed the x rays at that cellular stuffing
those atoms that bind and contort like family
showed the boys down the hall your baby pictures.

It was you who pointed the x-rays at that cellular stuffing
called it two lovers twisting, a double helix.
Showed the boys down the hall your baby pictures
and watched them lick their lips,

called it two lovers twisting, a double helix.
Explain that more calculations are necessary
and watch them lick their lips.
You never understood the hunger of men.

Explain that more calculations are necessary
Work harder and more diligently to make up for your sex.
You never understood the hunger of men,
loved science for its cool and alien beauty.

Work harder and more diligently to make up for your sex
How could you know that Watson and Crick
loved science for its cool and alien beauty,
loved more its blood in the water, the chase.

How could you know that Watson and Crick
took one look at your darling and said mine,
loved more its blood in the water, the chase.
Rosalind, you should have

took one look at your darling and said, Mine.
Should have showed them your uterus blooming with radiation
Rosalind, you should have
ask to see what they had given up for love.

Should have shown them your uterus blooming with radiation
when those boys published their genius
ask to see what they had given up for love.
How careful you had been to play your part.

When those boys published their genius
the world said, of course. And you were silent.
How careful you had been to play your part.
The cancer took you before those boys ever spoke your name.

The world said, Of course, and you were silent.
No awards or cameras, sports cars or honorary degrees.
The cancer took you before those boys ever spoke your name.
You wouldn't have wanted it anyway.

No awards or cameras, sports cars or honorary degrees.
You keeper of our invisible selves.
You wouldn't have wanted it anyway.
You were a scientist first.

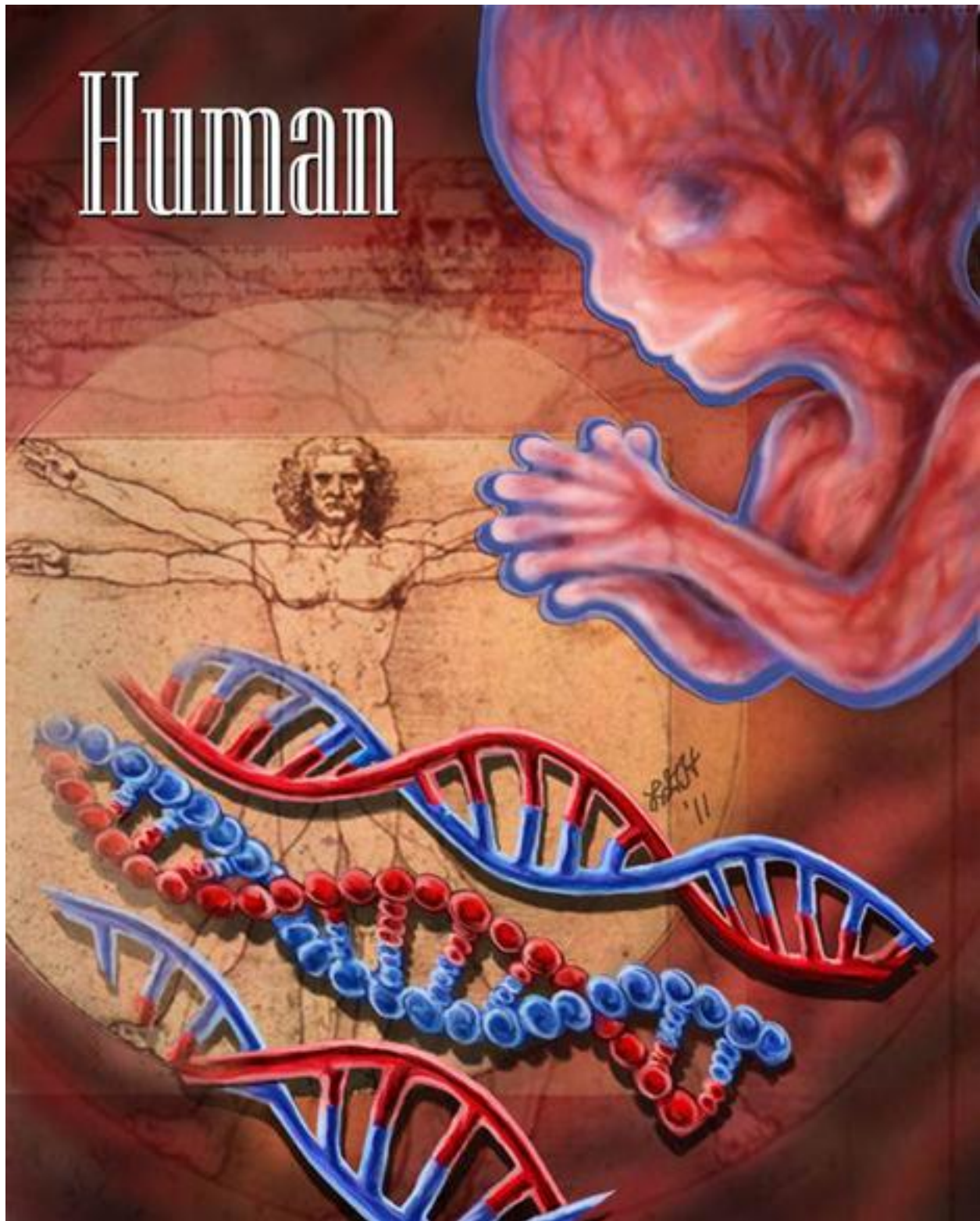
Fractals

Mary Myers

In endless repetitions
the arguments recycle:
fractals are just geometry,
formulae describing a relation-
ship of numbers;
others observe fractals
as organic, morphing
shapes, self-similar,
when magnified:
the spiral of the nebula
is the echo of a spirokete,
a dynamic series
of cyclic feedback systems,
in endless repetition.

John Muir saw a glacier fractal
that traced its shape across
Yosemite, similar delineations
in ice, then stream meanders,
canyon walls and moraines,
perimeters of forests,
and flight paths of the birds.
This preservationist
who peered through time
discovered hidden similarities
in endless repetition.

I am enmeshed within
a fractal called ecology
an energetic hoop,
where every voice, at single
knots within this web, sends
tremors throughout the weave
in unforeseen systemic waves,
touching jaguars, and bristle
cones, and hearts, and
cells and stars, and ears
in endless cyclic permutation.



New Ways

Eddie Swayze

New ways, new ways,
My mind is charged in wires.

I feel like an android, ready to hum into life.
Hear a strange white noise of a new refrigerator, a science fiction sound effect.
Sunlight beams down to the polished wood floor,
Miraculous light heading toward the future.

New ways, new ways,
My insights are turning into reality
Like holograms finally becoming possible.
See two new modern blue bar lights
Glowing above a new bar table,
A 21st Century blue-eyed child
Looking at the future.

New ways, new ways,
New Mac laptop stirs into life
With its radiating phosphorescent light,
Playing its electronic violin sweetly.
Walk through a new space of the place
Like exploring through the tunnel into the future.
New small magical electronic device
Beeps its ethereal sounds,
"Star Trek"-like gadget that kisses my digital hearing aids.
New fancy video-phone comes into life in my living room,
A journey through cybernetic landscapes.

New ways, new ways,
My mind is charged in wires.

Science

Cathy Bryant

Seems impersonal
Until you see the thin arms;
Child vaccinations.

Knee Replacement

Elizabeth Kerlikowske

I carry a card that says
I can set computers on fire
interfere with walkie-talkies
and bring a shiver to the dead.
Bionic me, titanium knee.
That card is my permission slip
to mayhem.
At every interrupted exit
librarians give me the eye
and it's always watery.

In Saginaw,
I made the dishes fall from
the kitchen shelf.
Electric pencil sharpeners
whirl air to a fine point.
Sympathetic pain
in the unfeeling joint for
trucks on the downhill grinding gears.

A fear
of slippage, antibiotics
anytime there might be blood:
tooth or toenail
Fear of ice.
Worse: fear of revision

Dead Inside

Jonathan Reisman

a family friend died today
cancer had been chewing at her breast for sometime
like some evil sharp-toothed neonate
chewing and sending its mysterious malignant miasmas into her bloodstream
to screech their blood-curdling war cries
turning her platelets into an army of zombies
that amassed in her leg
marched in formation to her lung
and silently ended her 52-year-old respiratory life
as she sat next to her daughter in the car
"mom?"

more screeches and cries followed
not from the miasmas
but from her daughter
then family
then community

in medical school we dissect such tragedies into causal chains
thousands of links long
we call it pathogenesis – the birth of pain and suffering
first physiological and hidden
then emotional and explosive
but this part is not taught in school
in school we read from this book of genesis over and over
building our faith and worldview through repetition
the story of cancer and clots, dyspnea and death
the ecology of bloodstream bits
platelets weaving a fibrin textile
we repeat the stories passed-down
as we round
as we stand at the bedside
and before our heavy textbook-laden eyes swirl diagrams of coagulation cascade

all this data
painstakingly shoved into our crowded memories
is there still any room in there to grieve?
how are we knowledge-laden to re-enter the suffering human community?
the same old cold story of A leads to B
B leads to death
death leads to funeral
and now it is time to put pathogenesis aside
but how?

fear not, medical student
the funeral reminds you how
the husband and motherless children weep
and real painful human life floods back in
blurring your medical vision with tears

drowning a carefully constructed mechanical vision of pathos
a mathematical lattice of forces built by countless hours of study

fear not, medical student
emotion cannot be crowded out by a trillion bits of knowledge
and death is now sadder than it ever was before you learned its real story.

Hematopoesia

Frederick Langheim

five thousand frozen hearts in plastic bags
hold an eternity of verse in code
expressed within the selfish intron's tomes
their stanzas, iambs, anapests are tagged
and accented in chromosomal choriambes
and chamber villanelles that follow forms
laid down in pastoral and primordial loam
cast off by medicine as second-hand
genetic nonsense - caesurae in true code
of terza rima guanine and adenine
spellings of amino acids on sugar bones
producing all the bodies prized proteins
responsible for ills and antidote
and skin and lungs and tongue and arms and wings

Headphone Madness

Patricia Gamache

I slap his hands to pull the cords that dangle from each ear
And as I watch his darting eyes they come alive in fear.
He grabs the spongy toxic ends to hide them from my touch
And as we wrestle back and forth he knows it's just a crutch

He knows I want to stop the way he spends each thoughtless day
He fears I'll take the whole darn lot and throw it all away
And even though I want to stop the madness he displays
I know I'll buy a better gift for him another day...

Every Man For Himself

Eddie Swayze

Ethereal lights sparkle our eyes into glass-like ecstasy.
Entranced into romance upon technological pride.
Every man, every man for himself.

Zoom head on up to the ultimate.
Majestic silver and gold cities glimmer diamond-like everywhere.
Sweet sugar-coated America juice up our veins.
Fast-paced automations dance in every corner like mechanical children from
neon-lit science fiction tales.
Every man, every man for himself.

Colorful heaven-like lights turn into rainbow halos above our heads.
Head in here and head out there, multiples of places for us to go in great speed
Like electrical currents zapping through circuits and wires.
Every man, every man for himself.

Feel the chilled minimalism, steel-laden, painted in acid-white from fluorescent lights.
Chill our hearts like cold rubber android lips.
Drink some cold liquid with neon-reflected ice cubes at technological-flavored nightclubs.
Bright candy-colored computer screens hug our bodies in empty cocoons.
Every man, every man for himself.

The Changing Medical Profession

Lewis Gardner

Where are the obese, wheezing doctors
of yesterday? As they puffed and huffed
to get around you to check your breathing,
they smelled of cigarettes. Their injunctions
for your reformation were halfhearted -

Not like the new breed, thin and fit,
who if you say you don't have time to exercise
tell you *they* rise at 5:00 a.m.
for an hour's bike ride, losing
30 pounds last year which they've
kept off. I miss the doctor I used to see -

Twice my weight, when he sat down
across from me in his office, he was relieved
to be off his feet, and dying for a smoke.



Survival of the Fittest

Venetia Ghozlan

Men talk of peace
but prefer to make war
a friend tells me
it is the testosterone
in man and his superior
intelligence
that drives the suicide march to our better built
mousetrap.
We are both
exterminator and dead vermin.

Man's tunnel vision
is an extraordinary thing
if we go the way of dinosaurs
perhaps the cockroaches and rats
shall inherit the
earth
and the size of their brains
limit their depredations.

On a reflection
I know
a poet must write
and this blood spilt
is his ink
the tissue, his parchment.

What would I feed my compositions
my composed admonitions
if not for human follies.
Writing is a parasitic occupation.

Tripartite Brain

David O'Neal

Our human brain is tripartite:
Part reptile, mammal, and primate
And often doesn't get things right.

The oldest part of it's the snake's:
The reptile brain that's all instinct
That fights or flees or fakes and makes mistakes.

The mammal part's like a dog's or cat's:
It's called the limbic system
And emotes and fosters feelings - even in rats.

The third part's the neocortex,
The newest and, some say, the best:
It thinks and plans and is the most complex.

The neocortex knows just what to do:
It apologizes endlessly
For the shameless goings-on
Of the other two.

Progress?

Elizabeth Clark

Eggs harvested yield long-awaited joy.
 No thought of gender – either girl *or* boy
 Will fill their parents' hearts with love and hope:
 A cherished babe must bring their lives new scope.
 But what of those who wait, frozen in time
 Long captured in their donor's fertile prime
 To languish, en masse, in a petri dish,
 Until their ageing host declares her wish?
 Then cherry-picked to order: "Boy, or girl?"
 To fill the gap in Mother's social whirl.

An introvert imprisoned in his room;
 The cunning box illuminates the gloom.
 Keen eyes and fingers dart in harmony,
 The goal: annihilate the enemy.
 No technophobe could ever comprehend
 How wires and plastic could replace a friend.
 Who knows what seeds are nurtured in his brain?
 What thoughts of the abhorrent and profane?
 Until such time he lifts his father's gun
 And runs amok, destroying everyone.

Higgs-boson is the buzz-word of the day;
 Ground-breaking news, the scientists all say:
 A particle no man has ever seen...
 The key to our beginnings - or a dream?
 For maybe they are rash in what they do:
 Could their Collider split our core in two?
 Poor Albert never meant for men to die
 Beneath a deadly mushroom in the sky.
 But once announced, a theory has a voice
 Which amplifies, eliminating choice.

As any power, Science draws misuse,
 Too oft the quest for 'Progress' the excuse.
 In hands of good, it may well do the same:
 In thoughtless, create suffering and pain.
 Exert great caution with each new idea,
 Lest it be whispered in a mad man's ear.
 All implications should be well thought out
 And concepts hushed in iota of doubt.
 One prays that common sense might just prevail;
 If not, Mankind is surely doomed to fail.

The Leviathan

Boghos Artinian

I, a human being, thrive
 On cells, a hundred trillion strong!
 They all must strictly obey
 Commands in the genetic tongue
 That I may comfortably live
 And unencumbered behave,
 While each cell I ruthlessly hold,
 Until the day it dies, a slave!
 Yet I fail to understand
 That I also must bear the pain,
 Someday, of strictly obeying
 The alien commands in my brain
 That a leviathan may live
 And unencumbered behave,
 While me he would ruthlessly hold
 Until the day I die, a slave!

Saikeirei – a haibun

Lew Watts

Hands on mouths, we stared at tilted boats, the slurried streams of cars and flowing fields of towns and homes, listening to the gasps behind the cell phones as their past was swept away. When all was done, when Earth had had its angry say, it seemed to all the world that nothing could have lived within the tumbled mass of timbered death. But more than life survived. For, in the clawing rubble, people saw the sense of calm resolve behind the gritted masks, and watched in awe as strangers wrapped their love and arms around the frail, the lost, the last ... no looters, rants or wails, just acts of true respect.

They say your island shifted seventeen feet that day, but it is us that moved, were moved, closer to you, humbled by your dignity.

before first light
 Spring flowers
 bow to the east

Human Potential

Geoffrey Landis

I had a girlfriend who said she could see auras,
lambent fields of energy suffusing every human
all the colors from ruby through ultraviolet
(We all radiate about a hundred watts,
mostly in the infrared.
I doubt she could see it.)

But if
she really could see even a fraction
even a tiniest portion
of the energy inherent in every human,
Einstein's energy
--if we truly could reach our utmost potential--
her inner eye would be
not merely dazzled
but blinded.

S.O.S.

Susan Read

I am sitting in my kitchen rereading Tom Robbins when I get this
Message.
My inbox reads
(1)
And I am fairly certain who it is from.
I try to keep reading because
I've been over these opening pages before
and I just can't seem to get through them.
I think that Tom Robbins is smarter than me,
Or he thinks he is.
The result is the same.
Rather than relaxing into the language
I am thrashing in it.
His metaphors are choppy ocean waters
And the under toe of that vocabulary
Could suck you into its abyss before you figure out what
SOS even stands for.
He resists meaning or I do.

Save Our Souls, maybe.

I still see this
(1)
In the far left tab

Where I leave my mailbox open and waiting.
 I imagine Tom Robbins would have something clever to say about that.
 And he would phrase it better than I could so
 I will save my breath.
 Needless to say I am longing for the days of mailmen
 Who would arrive at some
 Given time of day,
 Make or break your heart,
 And go away.
 And for one day you would know.
 Yes or no.
 And you could get on with whatever it was you did in those days.
 Churning butter and whatnot.

A few more lines of poetry or prose go over my head and
 I wonder what you've got to say this time.
 So I swallow my pride
 And crawl inside.

Sink Or Swim.

(1) A modern day love letter.
 You are just writing to say
 All is well
 - Which doesn't mean a goddamn thing, by the way -
 But you're just touching base.
 Here is a photograph of what I am missing
 Etched in an English that would make Tom Robbins' skin crawl.
 And yet.
 One could argue that punctuation is overrated
 Spelling arbitrary
 And meaning beneath words
 Not in them.
 Your love is as careless as your word play,
 Your rhyme without reason that lets me forget the rules.
 But your waters are great for swimming.
 I can jump right into these lines
 And the way they flow together in sentence fragments and
 Run on sentences
 A gentle surf that lets you drift out,
 Somewhere safe.

And I might just float for days
 In the refuge of these waves.

Sunk or saved.

Ascent of Man

Venetia Ghozlan

after ten thousand years of evolution
civilization
bigger brains
better weapons
sophisticated sciences
larger cities
elaborate rituals of faith
or myths
written words
grandiose gestures
still tiny, childish voices cry
in the night
defenseless in their weakness...
(we grow our own monsters taking delight, in being less than human)

Illumination

Venetia Ghozlan

it was the small sounds of silence
I had learned to treasure
as I laid in my bed
a secret alcove
under the shaft of sunlight
stabbing through draped windows

it arced
across my paralyzed form

no nursing cushioned footfalls
echoed through white halls
to disturb my rest and
thoughts

just that bold
cone of light that declares
something
here still
lived...

A Collision of Moments

Michael Johnsen

A far distance. The speed of light
notwithstanding. The back street of the past falling
away into clouds, into remembering. The pavement

of an endless future hidden beyond
an infinitude of curves. That intersection, those light cones
ever running at heel. Racing our next step. We, chasing

an impossible now. This road
of many spurs wears hard its migrants: Those shipwrecked
seeking a path from the sea. At their feet a tidesuck

of sand. Stationmasters' harried
cobblestone dispatches of forgotten promises. Or skysent
messengers bringing tales long since told

without number. Lying in wait, road
agents of false gods. The misfortune of truth. Prisoners
of science, we are trapped between mirrors. Ever doomed

to stumble after ourselves. We hide
among clock towers. For protection from the caprice of wind
blowing with laughter. Beg a night's rest. At roadside, hospice

against the storm. Until
dawn again delivers us to our road. Metes out
its everlasting punishment. And yet chance authors

this rarest collision of moments.
An encounter of like travelers. The light of each holds
fast against all that will come. Is it the Gods

who look to one another
in confusion? Nature thumbs its pages of law. We seek
any answer. As you go your way, I mine. In our own time.

Molecular Propositions

Kane X. Faucher

If one works toward worry
Then that becomes a whole world, which is all that can be the case.
It is radically to abolish
All concern for any others but all that resides in the insular cavern of its logic.
If truth is fact
And facts are the smallest unit of logical measurement outside their relations,
Then the bonds that hold them fast must be
Molecular.
More than left, right, up, down;
Facts are sticky. They adhere.
In long, unctuous trains of bonds, they form sentences.
Sentences are a register of expression
As much as they are components of a problem
Disassembled in a truth table.
Worry is also selfish, highly personal.
It constructs its own environment,
It carves its own domain of truth within the sphere of care.
On the basis of truth and the world forced to be the case,
Even logic will give no answer to the erroneous proposition,
"I am worried about you."
Worry only has one world
Populated by too many verbs.

For Science

Amy Kitchell-Leighty

When Ms. Uhl sent in paperwork to be the first teacher
in space, our entire school cheered, especially us

6th graders because she was *our* science teacher.
But Ms. Uhl wasn't chosen and on January 28, 1986

I got off the school bus at my grandmother's house, stood
in front of the TV, and watched the space shuttle explode

over and over. By the time we reached the 7th grade we left
Ms. Uhl and went on to Mr. Keller's class to learn

about Petri dishes and how to focus a microscope.
The last time I saw Ms. Uhl she was strumming her guitar

while we sat and sang learning *One Tin Soldier*, and as she
pondered her fate, we watched her turning toward us

like water in a stream turns into your body and wraps itself there.
I wonder if she filled out the paperwork quickly back then with her

straight hair parted down the middle. Maybe it was easy
for her with no one to tuck in at night, no one to read *Goodnight Moon* to.

Calculus class

Daniel C. Bryant

Velocity = time/distance.
A point has zero
distance.
For the rock
 falling in space
 what can velocity
 at a point then
mean?

Two rows ahead
Jan made a note.

We say the rock's velocity
at a point
is the limit of its velocity
between another point
and it
 as their separation
approaches
zero.

Velocity = Love
I wrote
and passed it up.

Chaos of Order

Meg Eden

falling in love with the scientist,
I fell in love with science
and see little vectors dance
whenever I close my eyes.

according to magnetism and
cliché greeting cards,
opposites attract.
an artist afraid of science because
it has too many rules is now
chained by equations,
formulas, numbers
love.

paint colours fly as
projectiles in this
world without gravity.
This is my existence now:
the chaos of order.
the order of chaos
the paradox that has somehow become
me.

I wonder if I will
explode
at the impact.

An Accounting

Sandra Lindow

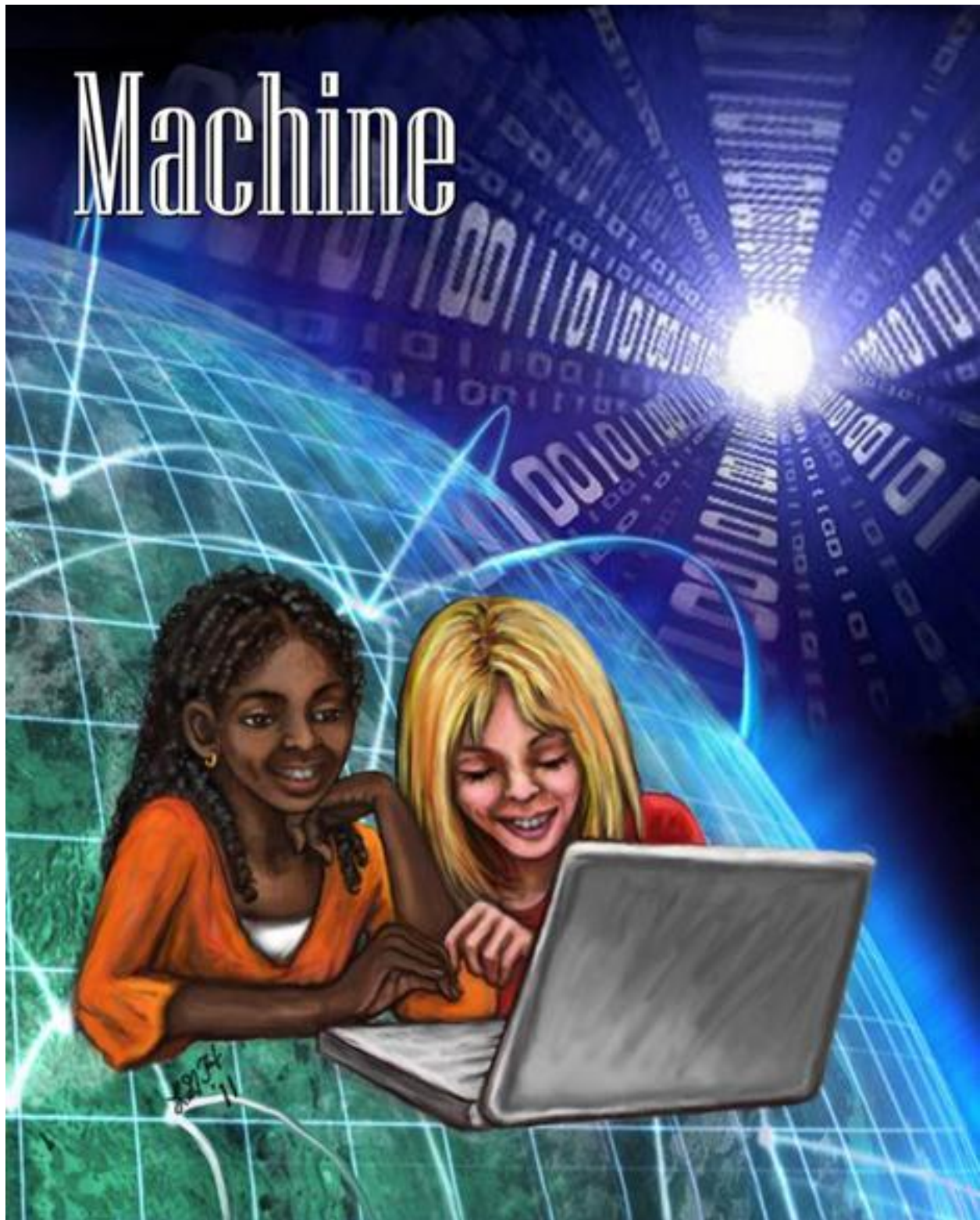
Once it was enough
to count ten fingers and ten toes
on the baby suckling your breast
and, blood to blood,
charcoal scratch the shape of the moon
twenty-eight times on the wall of the cave or the tent.
Once, forty days and forty nights
meant a good long time, but knowledge
has made the accounting more complicated.

Our four billion year old earth
is fourteen billion light years
from the farthest observable galaxies.
The once ultimate googolplex* is used daily
in measuring the teeming submolecular
worldbody and bodyworld.
Numbers, I say to my daughter, Miriam,
go on forever.

Bodies count; each day
two billion cellular furnaces fire and fail,
while the regular road trip of the blood,
makes a map more than 60,000 miles,
tollroad where "de" and "con" struction
strike delicate balance.
At four thousand beats per hour,
my 1949 heart has pumped
more than thirty million gallons
of high octane blood.

I am in my fourth decade, my second marriage,
my third house, my sixth pair of Reeboks.
Today, Scott, my first child, will travel ninety miles
to register at a university that enrolls 40,000 students,
an enumeration of distance and connection.
Miriam is six and starting first grade;
she says, "Numbers have to have an end--
a thousand has to be the most--
'cause otherwise you could die counting."
As I pause to reflect, I think, Miriam, dear, we do.

* ten to the hundredth power



TXT MSSGE HMLET

Barbara Crooker

*Digital interactivity has led to a significant decrease
in verbal skills. --Wikipedia*

So yr mom's getN it on w/ yr uncl
n mayB dey offd yr dad
yr grlfrenz a stuck-up btch
flotin dwn d rivA
n yr bst frnds Btrayd u
So fkng what? 2 B
r nt 2 B, dats d only Q
Tym 2 gt yr groov on.
Gt outa d dumps n danC

Time

Chad Herman

I wish there
was real time
still.

A time when you
could buy
a piece
of electronics,

and it's
replacement wasn't
being wheeled into
the door
as you

leave.

Ginza Goddess

Neil Harding McAlister

Adorable, seductive smile
With hint of *yaeba** fangs --
Japan's new boobie queen, you fill
Men's hearts with longing pangs!

Pubescent boys and balding men
Who could have been your dad
Admire every inch of you --
Their latest porno fad.

The stressed-out Tokyo salaryman,
The lonely techno-geek,
By light of their computer screens
Imagined comfort seek.

But AV idols' reigns are short,
So smile while still you may;
And put away some extra *yen*
Against that rainy day

When newer girls and fickle taste
Will push you off your throne.
Time lends you only fleeting fame
When beauty's all you own.

And yet your image shall not age --
And that's what people see.
So, on the Web, at least, you can
Delay mortality.

Though supple limbs and saucy breasts
Their good looks can't retain,
As you fade like the Cheshire cat,
That gorgeous smile remains.

**yaeba*: A "double tooth," a prominent canine tooth, or a "jutter"; a small imperfection in dental alignment, reputedly considered a cute and desirable attribute for young women in Japan.

Radio Parts

Louis Gallo

In that rank old shed
we sorted resistors by color code
into the metal bins of a fishing tackle tray.
Capacitors went into soup bowls,
the regulars in a chipped carnival tureen,
an earthier crock for fat red electrolytics,
my favorites because they pulsed with danger
at the "+" and "-" signs on each end
where stiff wires poked out like whiskers.
Switches, fuses and solder terminals
bulged from an old John Ruskin cigar box.
Vacuum tubes required a cookie jar
that had lost its lid,
and the spooky mercury-vapors
that clicked and glowed purple
were so holy we kept them upright
on a shelf all their own.
My father sketched the spidery circuits
because I couldn't grasp the difference
between ohms, amperes, watts and voltage,
that king of forces and almost spiritual rush
arcing blue-white between opposite poles.
I was good at soldering one part to another,
especially with copper wire that flared cobalt
at certain angles, like a shade of lipstick.
Smooth, even joints took patience,
the right amount of solder
and a tip so pristine
it burned steady Halloween orange:
so I scraped those tips with fine sandpaper
before each job, measured out my solder
like money.
We checked for shorts and loose joints
with the current on, and once,
poking about with a screwdriver,
I dipped into a maelstrom of AC
that jolted me off the wooden stool
and sent me careening across the room
to splatter against an opposite wall.
Dad wasn't around then
but when I told the story and showed him
my scalded finger he bought me a pair
of insulated, rubber gloves and warned me
to respect power, to stay afraid.

But it wasn't fear
that tugged me out of that shed;
it was transistors, weird little beads from Japan
soon to outmode everything I knew.
Inscrutable and alien--unlike vacuum tubes
with their lovely filaments, grids and plates--
transistors defied an easy order of intuition;
you could almost see electrons
flow through tubes, like fire leaping
from baked, smoldering logs into the air.
Transistors never moved, heated up,
flashed, hissed or clicked.
My father bought some books about them
but by then I had lost interest.
Girls too had become a lot more attractive
than radio parts, though they also
had codes (beyond any known colors).
So it didn't surprise me one day
to notice a padlock on the shed door
as I rushed on to wherever I was going.
A few years later Dad tore it down
and built a spiffy new carport--
as if the past just fades out
like the sedate glow of a 6L6,
that most noble rectifier,
when you turn off the switch.

The Idiots of Tomorrow

Lee Evans

When the wave of the future
Washes over our graves,
Will anyone be left who knows
How to read a poet's handwriting?

Give me a scrap of paper
And an old pencil stub.
Let the rest of the world be cast
Headlong into cyberspace.

I'll be sitting on this bench,
Scribbling indecipherable runes
For the idiots of tomorrow
As they overload their database.

Netspeak

Harvey Whitney

```
<html><title>netspeak</title><head></head><body>
```

```
<no><other><technology><has>
```

```
BIRTHED
```

```
<umbilical cord and all>
```

```
<more>
```

```
<saccharin><acronyms> ,
```

```
<galleries of word atrophies> ,
```

```
<and>
```

```
<ideas stillborn>
```

```
iirc, imho
```

```
</body></html>
```

Earphones Wires Hanging from his Ears Down his Chest

Daniel Bogogolela

Earphones wires hanging from his ears down his chest

The eerie blast of his music system attracting the attention of anyone except him

He keeps looking at his phone's screen

Scrolls up and down using the navigator

He has loaded mp3 sounds that he listens to from the internet's website

He samples song and creates sound bites in the process

Passers-by are not amused and complain amongst themselves

He does not hear any word they say

The sound has battered his eardrums and partially turned him into a deaf mute

To those who complain he is nothing but a nuisance

He listens to music till he goes to sleep

He charges his phone at home and school whilst using it

His cell phone is his pride and joy

He is not about to be deterred from enjoying life because of whiners

He loads more tracks into his 2 gigabyte memory phone card every week

He is a moving ghetto blaster who is heard from a distance

A savvy young man who exchange ringtones and videos with friends through a Bluetooth device

He is not a bore and is fond of good things in life

You may agree or disagree but

His ear blasting cell phone is proof of that

A Solid-state Identity

Kane X. Faucher

A solid-state identity
composed of 1,048 processor cores
Specs:

- +advanced mood processors
- +more thought transistors
- +cloud-ready for all cloud-based advanced motor function software (cloudware)
- +quarantined set of cores for seamless regulation autonomic functions.
- +Quantum phantasy engine for hyperreal 100 megapixel dreaming.

The isolation node was foreshadowed
-digestive refractoriness
-a lack of fastidious taste &
-an oral maladaptation disguised by deft keyfingering.

What became of the hero's appetite,
left to cannibalize his own memories
in the virtual trenches,
the grey snake of a peptone psychic enema obviating phantoms by feasting:
Pac Man exorcism.

Lux ex computatrum
Lux ex computatrum
Lux ex telus totius terrae

Sciatic Network: :oblongitude x oblatitude

viscoup-au-poignard
In Book VI of the Wealth of Nations, Smith dubs ontology a cobweb science
In the fan-fic adaptation of its sequel. XCapitalism & XNationalism as Faith-Based Networks,
another equally named Smith says WWW is ontology;
to be precise: the onto-net, the ego-trade, the adventit avataris.
I have searched long and hard on one screen of impossible magnitude and dimension for
Bernard Mandeville
coming up with the taboo apercus of malthusian correctives
& other hortatory leftovers from the expanding cult of taste.
Nugaries nugarizing nugary!

SKU discordia
SKU# longa
SKU# /+h; /-h
at cc/-cache-point all is revealed [lux ex computatrum]
-/even the filing cabinet is /+h
and (y)our feelings are /+h



The Hero of Gor

Neil Harding McAlister

Flushed with hot conquest, the hero of Gor
Rides home triumphant, victorious in war.
Into his audience hall watch him stride,
Thrusting his chest out with masculine pride.

Bright is the armor and fearsome the sword
Wielded by such an invincible lord!
Crimson the blood that his enemies shed;
Piled high the vanquished that he left for dead.

With a self-satisfied sneer on his lip,
He doffs his helm and the blade on his hip,
Throws down his buckler, and mounts to his throne,
Smugly assured that his kingdom has grown.

Grand are his palaces, vast are his lands.
Legions of minions respect his commands -
Soldiers and courtiers and vassals who say
He is the Master whom they must obey.

New-captured slave girls in scanty attire
Cringe at his feet and await his desire.
Soon they shall yield their voluptuous charms
To his fierce lust, in his muscular arms.

When spoils of victory he would enjoy,
Who would his revelry rudely destroy?
Only one woman would dare be so brash --
"Honey! Log off now, and take out the trash!"

Cell phone video of the disaster

Joseph Farley

the faces stare out
from the computer screen
in great pain
awaiting an end
not planned for,
not expected,
but delivered
around the world
at near light speed
to millions of viewers
watching in awe
and anger
and great sadness,
before clicking on
another viral clip
of a dancing
hedgehog.

Without Pay Phones

Andrea Potos

No more accordion doors that ushered
me inside the chamber
where I could drop a quarter in quiet
modesty of exchange, away
from the throngs--now,
only this eavesdropping,
conversational laundry slapping over
invisible lines everywhere:
supermarket, credit union, cafe,
the nature trail where I want
only to meld silence with the great
crane's call; even here, solitary strivers
jog and chat past me, dumping unwanted
word-litter in their wake.

Leaving the Cell Phone at Home

Andrea Potos

I might be Alice
dashing
down

the rabbit hole;
or Lucy,
opening

the wardrobe--
pushing past the boundary of furs.

What beast awaits
where no one
can reach me?

Alone with myself--imagine!

The Devil's Bridge

JoAnn Stone

Night gossip steals from the tranquil hills. Silently thrilled the power proceeds
Across the hush of the grazing fields, down where the sheep are dimly white
Under the waiting black sky.

Over the gloom on wire and wood messages flow where bracken stirs
Aloft on the calm of the dreaming fields, across slumbering cattle by mystic ferns
Under the waiting black sky

Cables enfold tidings and news, cruise over lowlands hushed with muse
Hasten toward the welcoming light, the glow beyond the goal in sight
Under the waiting black sky.

Through airy boughs of poplars tall where sheltering spruce hold maples dear
It coursed toward the tender arms of the farmhouse window glow.

Through brick walls, plaster, beams and studs
The energy moved through the slumbering house
Approaching the kitchen's welcoming smells
It arrives at the box on the wall.

The object lurked ominous and black
 against the wall's confines,
 Invading the fortification
 Built by the owner's mind.

Echoes of the telephone
 Aroused the quiet calm
 Where care had lost its power
 Until the Ringing sound.

Treadmill

Alvin G. Ens

	steeled with	
	new resolve	this work
I step		expended
onto the		this energy
daily grind		accomplishment
where the		of meaningful
whirring hum		the mind
undulates with		while robbing
the pulse		in self discipline
of my own		exercise
footsteps		and vascular robustness
Spartan endeavour		of muscles toned
like another		to the fitness god
athon		fawning
circular wandering		the next lap
in the wilderness		and dessert necessitate
where no		the next dessert
concentration		to justify
needed		of energy expended
truly none		futility
permitted		and no stops
with artificial		no reverse glances
progress		no stumbles
registered		no peripheral activities
in quarter		calories expended
mile laps		calculated as
on a		work
	virtual track	

Sounds of Writing

Lewis Gardner

You once knew writers were at work
by the sound of their typewriters. Daytime
in spring or summer, whole streets
of the West Side and the Village
filled with the music of clacking and bells.

Now there is silence—windows closed
for air-conditioning, computers too quiet
to be heard below. It may be possible
to compose poems on computer screens;
something in me doubts it.

Yet even quills dipped in ink
and scratching across parchment
were a technological advance over chanting
in firelight—and all for the same purpose:
dispelling fear as the shadows grow.

Wrest a Spell

Sauce unknown

The following cautionary tale emerges periodically in unsolicited email, university workbooks, Internet blogs and chat rooms, attributed either to that wonderfully prolific poet Anon., or to "Sauce unknown" (sic). The earliest occurrence that we can find is a public Internet forum dating from 2007, where it was posted by an unidentified blogger. Hats off to the poet, whomever he or she may be!

Eye halve a spelling chequer
It came with my pea sea
It plainly marques four my revue
Miss steaks eye kin knot sea.

Eye strike a key and type a word
And weight four it two say
Weather eye am wrong oar write
It shows me strait a weigh.

As soon as a mist ache is maid,
It nose bee fore two long
And eye can put the error rite
Its rare lea ever wrong.

Eye have run this poem threw it
I am shore your pleased two no
Its letter perfect awl the weigh
My chequer tolled me sew.

White Noise

In the Time of the Great Waves, December 2004

Lewis Gardner

A small machine creates peace. Like a radio tuned to ghost messages, it creates electronic sound and nothing more: no music, words, sound effects. Hear it instead of city noises—it jams awareness of shouts, car horns, cries of children, marching boots, screams of the drowning, manifestos, sports results.

In the country: block the barking dogs, the psychotic neighbor. I used to lie in my hammock under the hemlocks. Now I stay inside and listen to white noise. White noise aids meditation or at least stops thoughts of your mistakes, your wounds, your insensitivities, what everyone's done to everyone else.

All the words: declarations of love or loyalty, pledges of protest, lies about you, rants about me—white noise is better than silence. It isn't white, of course, but devoid of color. The white race isn't white, either, and a race isn't what we thought it was. White magic isn't powerful like the other kind. White noise isn't clearer if you listen hard.

It has no message. It's notable for what it isn't. *Just like you and me.* White noise is Post Modern: it contains its own contradiction—these times are sick with paradox and irony: politics that celebrates incompetence and deceit, children hurt by those obliged to nurture—air, water, food destroying life—voices of dissent ineffective as white noise.

Outside the window, the forest and fields are white with snow that will last for months. The sky is white, hiding the sun. The hours of light are short: the sun is weak or hidden. We need to buy lights to counteract the desire to retreat to bed, to hibernate. Light for your eyes, white noise for your ears. Aspartame for taste. Scent machines hide the smell of decay.

These are times to sleep through; wake if the nightmare ends. Then open windows, open the door. Listen. Hear the clatter of a thousand leaves tousled by the wind. Taste tomatoes warm from the sun. Press flesh that smells of jasmine and spice. *Or stay in the empty room, watch the white sky, hear the white noise.*

Instant Message

Lee Evans

I took my notebook to the woods;
I sat down on a fallen tree--
Did nothing for the longest time
But let my thoughts flow as I breathed.

I looked about the underbrush,
And through the overhanging boughs
Between me and the cloudy sky;
Then back again to pages bound

With string and cardboard covering.
And soon I felt assured that I
Was quite the hermit once again--
That no one could contact or spy

Upon me in this lonely wood:
That here no mail or telephone
Could reach me, no one knock upon
My door, for I was not at home.

As fallen leaves careened about
By vagrant gusts of wind disturbed,
I versified my heresies
And spoke them to the squirrels and birds.

And in the scene before my eyes,
Not once appeared that little Square
Which chords of music heralded--
No Instant Message reached me there.

iPhonomenon

Meredith Danton

[Life is not measured by moments of breath
but by the number of apps on your iPhone.]

You pluck it from your pocket like Indiana Jones
beholding a gem
unworthy of plebeian hands
yours steady as a surgeon.
Tap tap.

Little letters swell to the touch – a video Viagra.
Why do you fondle that thing when I'm trying to talk to you?

Yes, it's a perfect	problem-solver
	music-player
	picture-taker
	jealous-maker.

My phone is smart too. But it doesn't recognize
the sound of my voice
the touch of my hand
the name of a song just by listening.
You stopped listening to my touch.

Fuzzle bubble game drowns out my droning
distracts you from driving
dissipates angst of waiting on line.

Online probe at your palm pilots through Google Earth
where you can see your house, my car in the driveway.
Now we're on permanent record.

The iPhone cannot be dropped-kicked, taunted
sweated on, snarled at, or placed too close
to dog reach range.

It cannot go out of the house without its rubber.

It cannot be exposed to direct sunlight or sand
or simply set down
when we're sitting face to face, wondering
how to stop pushing each other's buttons.

Tap tap.
There should be an app for that.

The Large Hadron Collider

Daniel Hudon

Guided by magnets colder than the space
 between the stars, zipping through the circular tunnel
 from Switzerland into France and back,
 under sheep pastures, the foothills of the Juras, the TGV,
 and the restaurants and cafés at Ferney-Voltaire and Saint-Genis,
 the beam of protons races twenty-seven kilometers around,
 eleven thousand times per second
while its twin races
 twenty-seven kilometers
 the other way,
 eleven thousand times per second
 zipping through the circular tunnel
 under the cafés and restaurants at Saint-Genis and Ferney-Voltaire,
 the TGV, the foothills of the Juras, the sheep pastures
 from Switzerland into France and back
until the two beams meet

head on

in a collision violent enough for scientists to wonder
 if this is what the universe was like
 an instant after the Big Bang –

long before the formation of planets or stars or galaxies,
 long before matter itself mattered.

And then what?

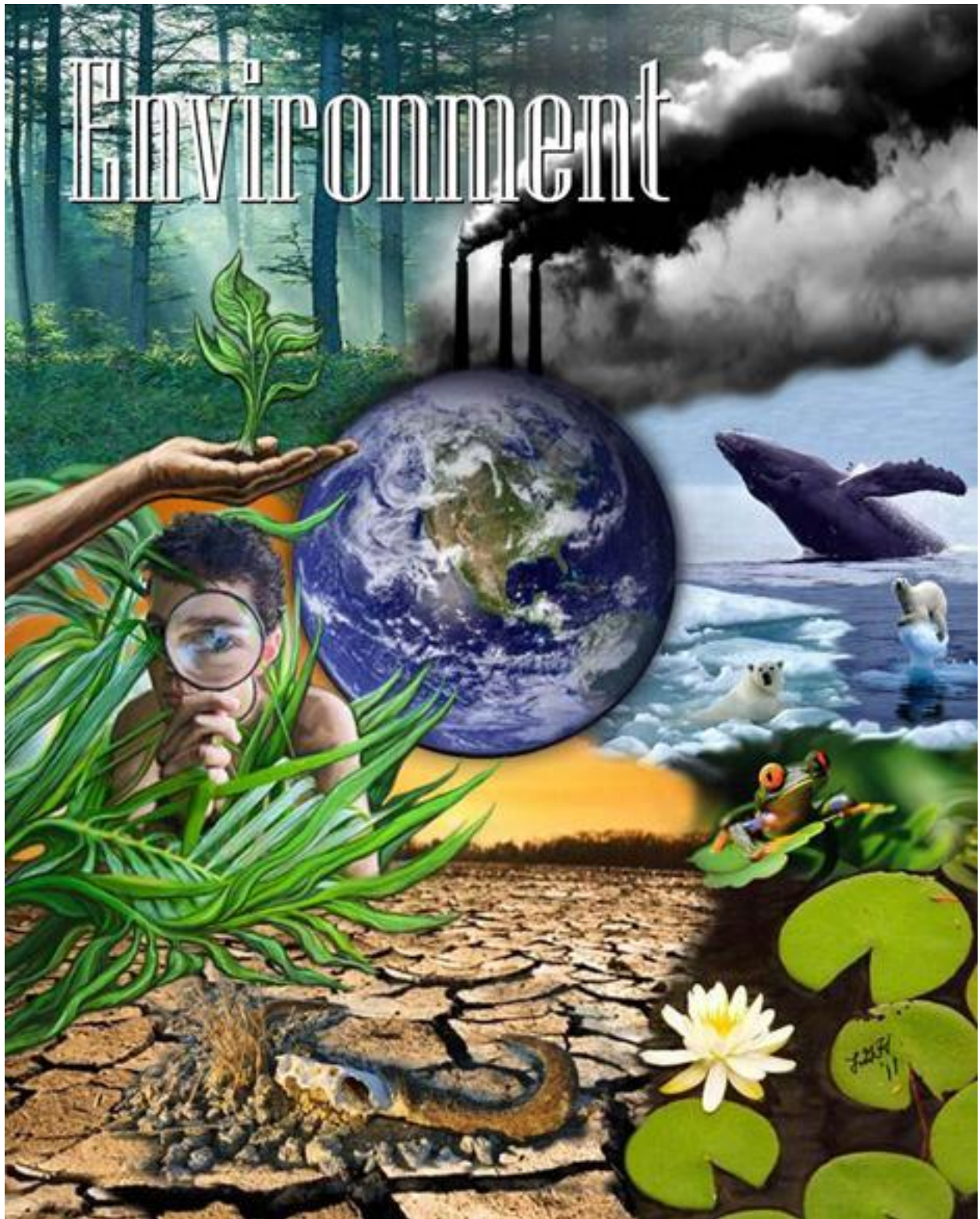
Around the tunnel, built like sunken cathedrals,
 what will the detectors glimpse in the holy fire?

New particles that pop into existence and spiral away,
 like the elusive Higgs boson that holds the secret
 to matter acquiring mass –

Evidence that we live in a universe of broken symmetries,
 the way a dinner table is symmetric until someone
 chooses the first wine glass –

That ours is a shadow world of higher dimensions –
 That the laws of physics can be unified
 like siblings separated at birth?

What can you see in the fireworks if you look hard enough?
 What can you see in the sunlight before it strikes the raindrop?
 What can you see at night – any night – when you look deep
 into the cold space between the stars?



Remainder

Lee Evans

I dreamed that Science would relieve my pain;
And through the weary night I tossed and turned,
Tormented by utopian concerns
To satisfy all cravings in my brain—
Surmount the bounds of space and time and strain
With brave new breakthroughs of Technology:
When suddenly, all Nature turned on me
The elements I thought that I had tamed!
Consumed with fire, choked in a watery grave,
By earth's upheavals torn, I gasped for breath;
As every atom of which these were made
Split open, to reveal the jaws of death—
But in the twisted ruins of my toys,
Compassion stood, of all things undestroyed.

Great Things for a Great People

Daniel Hudon

It is a great thing to fell a forest
whether for paper or palm oil or land for hamburgers
and therefore we are a great people
who thrive on the progress of sawdust.

It is a great thing to move a mountain
and therefore we are a great people
who can engineer the tectonic dust of time
into lights bright enough to obliterate
the Milky Way.

It is a great thing to litter an ocean
like the Atlantic with plastic and even greater
then to litter the Pacific too; therefore
we are a great people who believe
that what we don't see won't hurt us.

It is a great thing to drill the Earth
for oil and therefore we are a great people
who can vaporize reserves accumulated
over millions of years in mere decades.

It is a great thing to extinguish a hundred
species a day and therefore we are a great
people who let nothing stand in our way.

It is a great thing to modify the sky
and therefore we are a great people
who choose to deny our limits.

It is a great thing to marvel at these great things
for like the Romans, the Mayans, the Incas
and the Easter Islanders, we are a great people.

Biology Student

Lucille Lang Day

It was good to know that phloem carries sugar,
xylem carries water, and the plant grows
at the tip. I learned that dark reactions occur
in the stroma, light reactions in grana stacks.
Under the microscope, pith looked
like cobblestones, and I thought of it as a road
to a home with roses in the front yard—
White Knights, Good News, the Rubaiyat—
releasing perfumes as I climbed the steps,
carrying packages bought neither
with food stamps nor my welfare check.

But it was the animals that entranced me:
Sabellid fanworms with maroon and green
plumes like feather dusters that retracted
into muddy tubes when I reached for them
under the pier at Mason's Marina; black-
bibbed meadowlarks in yellow suits,
darting from branch to branch, playing
their flutes in Tilden Park; Gila monsters,
with beaded backs and grooved teeth,
shaking their prey from side to side to release
venom, till the victim stopped breathing.

I admired the way a gibbon squats
on a branch to contemplate the forest,
scratching its chin, so much like a human,
and the way starlike cells form constellations
in the brain, where grandmother's guitar
is stored forever and the transformations
of love take place, and, yes, the way
the four-chambered heart pumps blood
for a lifetime. The motion isn't a simple
squeeze, release, but a contortion. It's like
wringing out a towel with every beat.

Frisbee

Paul Hostovsky

We are all attracted to suffering.
And repulsed by it, too.
This doesn't make the world go round exactly.
It isn't a law of physics, technically.
But it may have something to do
with the relationships of bodies
in the universe. And also the atmosphere
of Earth. Which is where we all must live
for as long as we have left. For as long as we have
lift. And when you consider all of the plastic
found in the stomachs of dead seabirds—
bits of beach toy, medical waste, gnarled
cassette tape, whole flash drives, a red-striped
straw—it kind of makes you feel ashamed
of your own life. The way a seagull
rides the wind, oscillating, is almost as old
as the wind itself. What's new is
the adult birds can't tell the difference
between food and plastic, and they end up
feeding it to their young. It's a wonder
they can fly at all. In particle physics
there are six different kinds of quarks
known as flavors: up, down, charm, strange, top
and bottom. We used to smoke a lot of marijuana,
then practice throwing and catching them until dark:
forehand, backhand, overhead, under
the legs, behind the back and upside-down.
When my stomach hurts I go lie down
and try to think about something else.
But my thoughts always come back to the pain
as though it were a kind of home.

Coping With the Greenhouse Effect

Joseph Farley

In a future of hot, boiling seas
Take time to brew comforting teas.
Dip a bag in the ocean
With nonchalant motion,
And wish you'd cut down fewer trees.

Courtship Dives of the Male Hummingbird

Paul Hostovsky

He pretends he doesn't see her.
She pretends she doesn't see him.
But they have noticed each other.
They are both so small in the world.
How in the world will they ever meet?
She has no idea. But he has an idea.
It's one of those crazy great ideas
men get when they're in love.
The kind that just might work.
The kind that makes a man great
and gets him the woman. The world
is full of crazy great ideas, and this one
belongs to the male hummingbird. He will
dive-bomb at 58.6 miles per hour
with a body drag coefficient of 0.3,
as if to say, "Because you don't have eyes for me
I'm going to have to kill myself."
Then out of the corner of his eye
he checks to see if she looks concerned. And when
it looks like he's going to crash and burn,
she does. And then he knows. And then his heart
leaps up, and he pulls up at the last second
with a centripetal acceleration that
is rivaled only by the best jet fighter pilots.
Then he banks, and jukes, and flits back down
to earth, and takes her out for a drink of nectar.



Hometown

Robin Chapman

Which way was north?
Oak Ridge's directions were valley-skewed,
the long run of the road a compass needle.
The hills insistent
on the ways of water,
every fold a creek.

Which way was right?
The right was science-skewed,
the long miles of buildings
devoted to their task of sorting molecules,
pulling the small handfuls of death
out of the tons of yellowcake.

Which way was left?
The mercury sludge ran into the creek,
the long mile of river, the roots of the trees.
What's begun always has its own logic,
runs like a clock. Then the question of stockpiles,
keeping them up.

Which way was true?
The long run of childhood was twilight
and heat, summer shimmering in the concrete pool.
The game had rules— not to be found,
and the black widow spider
another neighbor we knew to give space to.

Which way was danger?
The spider's eye refracted the high tension towers
that marched the power of the Tennessee River in flood
to the task of making nuclear weapons.
Here the intent to save
the world.

Which way was love?
At the Overlook, in old cars,
we kissed and kissed, the body's pull
another insistence— sap and root,
another place to view
the only home we knew.

Elegy for an Unknown Species on the Verge of Extinction

Daniel Hudon

Yes, it has come to this: you at the precipice of existence
well before your time and us oblivious
for we are too busy looking after our so-called needs,
which seem to grow by the day – there are many
of us and we must keep up.

We don't even know if you are a mammal
or a bird or a beetle or a plant,
so much is disappearing forever – one hundred
species a day – that we can't keep track
even if we somehow did have you catalogued.

There is much that we don't know about life
and I hesitate to mention that we have lost some
of our curiosity, we are busy, we are stressed,
we need to make money, to be entertained.

Our tool-making has progressed to impressive
extremes to the extent that we sometimes think
our tools are us. There isn't much we can't do,
you should see our cities. But our cares have
changed. We used to worry about the harvest
and now we worry about the market, which
is the barometer of our mood.

Ultimately, the price of saving you is too high.
Reducing our consumption is bad for business
and we can't have that. We'll deal with the consequences
of your extinction in the same way we've done
for the thousands that have preceded you –
it's the least we can do.

The Inevitable Variable

Yvette A. Schnoeker-Shorb

The world's scientific community is now pointing out that we have only one Earth and that our global society is running a vast and dangerous experiment on it. If the experiment goes wrong, there will be no way to rerun it.

-- Paul R. Ehrlich and Anne H. Ehrlich
Betrayal of Science and Reason: How Anti-Environmental Rhetoric Threatens Our Future

Goodness gracious, massively spacious,
720 billion tons of ice shelf

broke!

It still is shifting, melting, drifting--
but what is this nonchalance?
Anthropogenic greenhouse enhancements
aiding Antarctica's dismantlement
aside, how not become frantic? Why,
instead, we move profitably ahead.

Oh dear, I fear the stratosphere
has been industrially profaned. Pardon
the jargon, but chlorofluorocarbons,
with methane, nitrous and carbon di-
oxides are confiscating ozone electrons;
now, pockets positively-charged reflect
the inherently human lack of sense
for geologic time. Should we stop
the pretense and globally dispense
with concepts of future tense
if nations can't restrain from short-term
gain at catastrophic expense?

Greenly speaking, this blue Earth
is a not-for-profit organization
that provides for all life carried
rather than the carrying on
of one variable species;
Homo sapiens can say what it will,
but, still, beyond the nicely-spiced
but unwise wall of brownlash rhetoric,
climates climb, ice shelves collapse,
planets warm: experiments go wrong.

Extremophiles

Tim Kahl

A universe full of ribose and
the Oort Cloud spitting comets at the earth
to serve up some extreme conditions —
only the archaea troll the ocean vents.
Our oxygen urge prevents an imagined face
from existing in the rumen of cattle,
in termite guts, in the mud of volcanoes.
We are not the only institution rooted
in the surface, thinking we are too big
to fail. We weigh less than all the nematodes
lurking in the topsoil. We shy from
acid baths that melt the flesh, but
we are all ice cubes melting in a room,
insisting our resistance to entropy
can be achieved by the will, will, will
of our same ways. The little bits leak off
and assemble into competing interests
that collect and swirl in the methane layer.
Then the methanogens take over.
The hot springs rile with a symbiotic
scrim. Polar oceans pulse with life in
their microscopic veins. Rust never sleeps
beneath the crust of Mars.
None of this tells me how to
fill up my days, except I have a duty:
to comprehend. I must act in
the interest of a universe of ribose
that likes to keep its secrets old.
I search the sludge and sewage
for a hint of my instinct to thrive
in adverse conditions.
But it disappears, pressed into
the odd columns and mats of
the hungry extremophiles.

The Red Bloom

Tim Kahl

Halobacteria inhabit the Dead Sea and swim
away from the sunlight to escape sunburn.
Photons arrive and the rhodopsin channels
open, I'm told, similar to the trigger of
ion flow in neurons. I think about my
decisions as if I were single-celled and adapting
to salt solution and magnetic field. I move
through petrochemical era and a patch of
superweed, contemplating blood flow through
an Oncomouse the way Darwin observed
blood to the bosom of a blushing woman.
Just like an erection, he remarked.
There is nothing new in all this salt water through
the veins. I think there is nothing new for
pigeons' brains to ponder. I believe that seeds
could spread around the world in their droppings,
the way Darwin did after he floated
a dead one in the sea for thirty days
and grew a plant from what was recovered
in the crop. My neurons fire in synchrony,
and I am aware, undistracted, focused on
my environment. Is this the evolution
of certainty? I wonder if archaeobacteria found
on a salt crystal in a deep mine shaft in Carlsbad
will turn up in the lost oceans of Europa.
Can I still believe in the sun god or move away?
Blood cuts its current in my head, my thoughts
spreading like a red bloom on the Dead Sea.

Global warming

Vivekanand Jha

Global warming stretched its arms
To hug all the joy and bliss of the world
It transforms achievement of years
Into bereavement of eternity.

All, keeping hand over hand
Waiting for the doom's day to descend
And extinct this mundane universe
In the blinking of an eye.

Incarnation of global warming
Seems to be inevitable
As it has already started laying foundation.
It has developed into embryo
From the drop of sperm injected
By the ruthless chimney of carbon industries
And by the smoke of population explosion.

Climate has turned to furnace
Frost to ice
River to ocean
Man to monster
Benevolence to gangster
Love to rape
Medicine to drug
Water to blood
Flood to drought
And drought to flood
Foul to fair, fair to foul.

Are these not good enough
To give a sign of caution?
Are these not the symptom of ill-omen?
If not, go ahead with your endeavours
And best of luck for handful days
That dwell on finger's tips.

Prozac Ocean

Meredith Danton

(After *Forage* by Rita Wong)

"Recent studies have shown that selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine are accumulated in the tissues of fish as a result of discharges of pharmaceuticals into surface waters from municipal wastewater treatment plants."

- Shaogang Chu and Chris D. Metcalfe

barracudas bear a friendly fang
to boxfish brethren gliding by
fins held high saltwater salute
staccato pursuit of yellow tangs by
yellow tails soothes into mellow
cruise mellow mood seeps
through each pelagic layer
fed by steady stream of fluoxetine
heady concentration in the urine stream
of this Prozac nation

herbivore is the New Order
of the ocean - a manta
ray mantra, piranha proclamation
that fish are friends, not food
plankton supplies run dry
filter feeders shell-shocked
by famine but drunk
on serotonin float carefree
in fish pharm fantasy

Be Natural

Cathy Bryant

Be natural, he says, serving a mixture of fruits from three different continents;

Be natural, he says, in tie-dye he bought abroad, smelling of strange old incense;

Be natural, take roots, take berries, not medicines from cold grey science, he says,

Though science kept him alive through the now-forgotten illness, the long fever-filled days -

Did you know, I say casually, unable to bear more of this flaky date,

That your Natural Unscientific Man didn't survive much past twenty eight?

Seismology Report

Joseph Farley

Pressure is building.
Explosions will occur.
Cultures and customs
grind against each other.
The longings of peoples
push and pull
at finite resources.

Beneath the ground
plates move inexorably,
an inch here,
a millimeter there.

It is so hard to translate,
few can understand.
The words are written
in fire and magma.

The day will come
when the earth
will turn on its side.
Then all that was written
will be read aloud
to those still alive
with ears to listen.

Truffle Shuffle

*Inspired by the news that the aggressive Chinese truffle,
Tuber indicum, had been discovered in the Perigord region of France.*

Tiel Aisha Ansari

The Perigord's about to go extinct:
invaded, conquered by a Chinese truffle
so pour a glass of Bergerac. Let's drink

to globalism! 'Least, that's how I think
this Eastern fungus got to pack its duffle
and move, to drive the Perigord extinct.

It's hard to beat the xenophobe's instinct
to blame the foreign. Dangerous to ruffle
Gascon pride: de Bergerac, in drink

or stone-cold sober, wouldn't even blink.
He'd chop this mushroom into shreds—but scuffles
won't save poor Perigord from sad, extinct

ex-trufflehood. The difference is distinct,
say experts. Chinese *indicum* tastes muffled,
doesn't go with Bergerac or drinks

of regional allure. A Euro-stink
with little action, plenty of kerfuffle
will last till Perigords have gone extinct,
so pour a glass of Bergerac. Let's drink.

What the Mantis Shrimp Sees

(*Gonodactylus smithii*)

Robin Chapman

On the Great Barrier Reef a mantis shrimp
waits in the shimmer of wave and coral
and parrot fish-flash in a shifting world
with eyes on swivel stalks bearing
eleven or twelve different types
of color receptors, infrared to UV,
six more tuned to light's polarized directions,
watching for the glint of its transparent food.

How can we, with just three colors
and black to white, imagine
what it would be to see as the mantis shrimp
sees? Such dazzle-dim displays of anemone
wavering in the flow as schools of mackerel
flash gun-metal silver that only hunger
can tear its eyes away to focus
on the subtle, polarizing shifts of light
from body sugars that give away
the invisible presence of its prey.

But there: "invisible," we say.

at the reversing falls

Theodore Christou

still waters swirl and rage
as subjects of the windy
gales and tremors in the
seabed earth they crash
themselves against the stones
and sands and decompose
foam and dissolve even the
dust storms in our eyes were
placid particles at rest and
not to blame for how they
cause commotion in their
desert homes for avalanches
blame the gravity that draws
even the moon to me

i watch nature force and shape

i watch all with a scientists' eye
and feel a friend to minotaurs
lost in labyrinths of epic

Extinction

Chad Woody

If this were the last day of our lives, it
wouldn't matter: sunny day or drainhole-dark,
we all herd toward the unseeable end
and people only veer when a crash is beheld:
too late, filling the whole horizon. I say
leave the dishes reeking in the sink—the shepherd
of extinction sweeps all the pastures clean.

Species go dim: dodo, hellbender, old
printmaker with failing eyes, blighted chestnut:
everything changes, draining out, making room
for other somethings which will only seem,
eventually, to add up to less: One person
cranks past on a two-man bicycle. A pig herd
stomps the green land down to a firm brown stink.

The smaller deaths are difficult to track,
their points unplotted, lost at frog level and less:
marbles, BBs, fly specks rolled into cracks.
I keep an aquarium in the dark,
a box of water bubbling with kept life,
blind and contained. Sometimes I sit
in that same dark room, listening to the wait.

OBX ***Allison Cummings**

Of no named style, but patterned on three designs,
rental mansions here stand vacant, built on stilts.
In May, tourists and retirees recline

on decks, skim hardbacks, walk purebred canines
to beach and back over smooth tar mazes.
Our buying patterns favor a few designs.

Family farms grow *Acres For Sale* signs
as Disney malls spring from mills rebuilt.
May roses bloom on tourist postcards, confined

to manicured roadsides and wallpaper vines.
This barrier island was paved in phases.
Nameless roads surge north like tidal designs

through dunegrass, each hurricane imprint a spine.
And the planet, shaved for easy access, tilts
under tourists, retirees, and hotly declines,

stunned by what the boomtime razes.
It outwaits our concrete nesting, times its blazes
or floods of our temporary haunts, clears coastlines
in a game of larger patterns, unknowable designs.

* OBX is a common abbreviation for the Outer Banks of North Carolina, USA

Tsunami... 3 tanka

Chris Valentine

1.

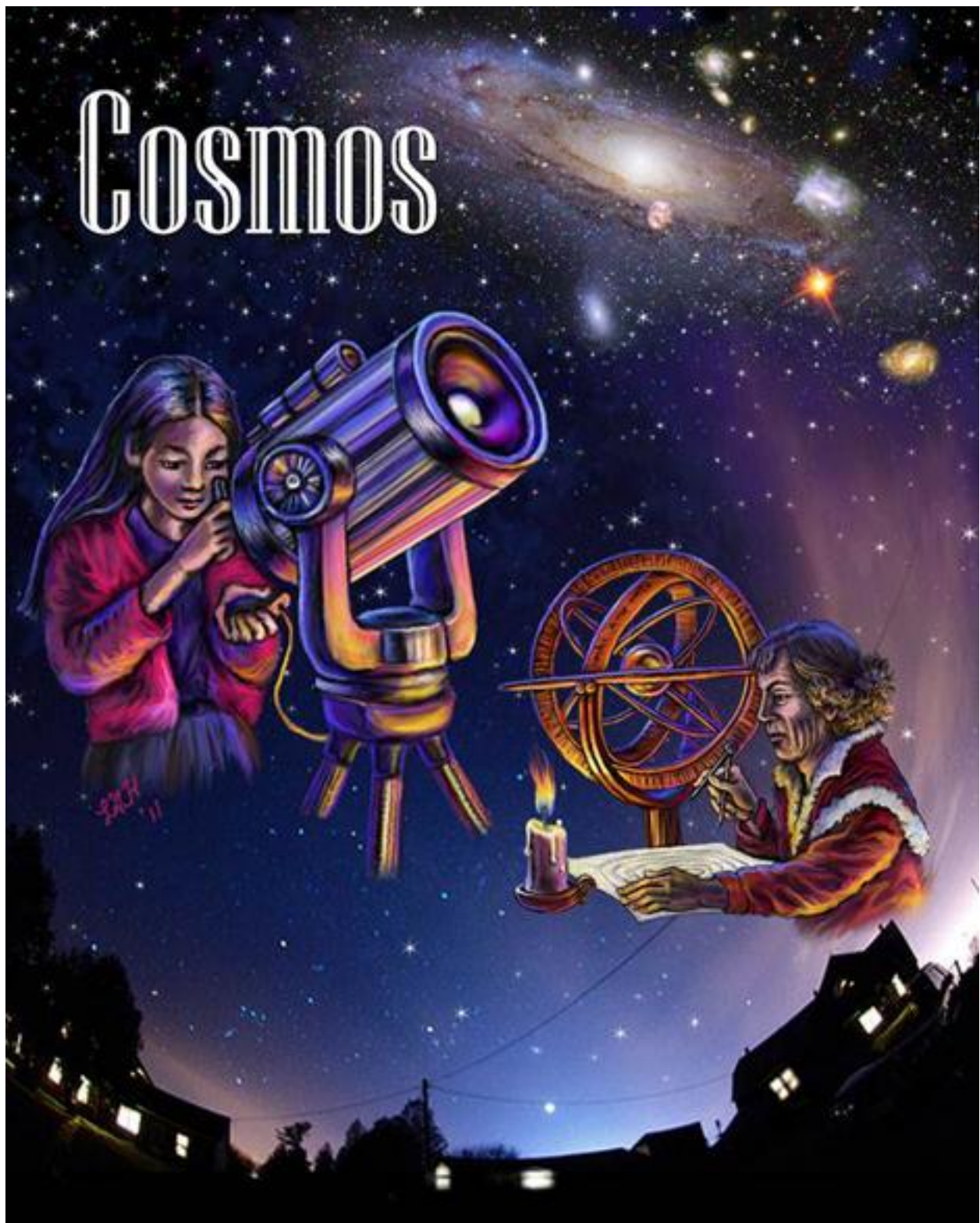
bodies in plastic
gases expel into air
carrying their souls
on soft after-storm breezes
peace broken only by tears

2.

tearful they wander
the families of lost souls
tsunami victims
examine all the bodies
lying in rows on wet sand

3.

how does heaven cope
with so many souls at once
will gates of heaven
open wide to their spirits
that float in on pools of tears



The Most Improbable Of All Worlds

Paul Barclay

the universe stood still
the revolutions in spheres
and in spheres within spheres
in a nutshell world
suited to the Aristotelian sense
that there was no such thing as nothing
had ceased
to be
and hence
there was plenty of nothing
to go around
so much so that things got so big
it boggled the mind
God was a sphere
the center of which was everywhere
and the circumference of which was nowhere (again)
and then
the universe stood still
the stars sparkled as they had forever
everyone supposed
for a time (but it seemed like forever)
except unhappy Boltzmann
who realized
time was an arrow
and the universe was a machine
inevitably a little energy is lost in each moment it functions
the arrow should have hit
it in its machine heart
long ago
and caused it to fizzle
it was next to impossible that the universe as we knew it existed, he said
it made more sense to suppose
we appeared spontaneously and imagined it all
well, in most minds the universe remained
and Boltzmann bit the dust instead
and ascended to heaven to figure
and to fiddle with the likes of Beethoven
good band of lonely hearts they've got up there
or in whatever direction it may be.
on the lookout for that
or anything else suspicious
a next generation astronomer noticed
something shifty
in the way starlight winked back at him
Eureka! he shouted and ran outside naked
well no, that's another story
but in case you thought this one had got boring

i threw that in
 nevertheless: it turns out that everyone who looked at the matter
 closely enough saw red, too
 was embarrassed, and concluded
 that there must have been some cosmic bang up
 a real big bang, that started the whole thing going
 as going things surely were
 the universe was in motion once again
 was a sphere rapidly expanding
 and by squinting hard enough
 we could almost see
 right back to that point
 when IT happened
 the only problem being
 the difference between
 the point we could see and the point we couldn't
 once defined approximately by Achilles not catching up
 to some dumb tortoise forever
 we could not quite trick or sneak a peak or look back on it
 on the singularly naked origin
 that shot time and space from its sling
 and so still we were left with no idea
 why or how

No Ordinary Matter

Peggy Landsman

A dull echo remains.
 The radio astronomers are
 All ears--
 Big as satellite dishes--

Listening for news that was
 Out of date
 Light-years ago
 Yesterday

As if it will set the world on fire.
 As if hearing a peep from the Big Bang
 Will tell us who we are.

Sky Unseen

Marc Prud'homme

Our ancient Passions drive us to
A Sky unseen for Centuries,
Unchanged against this World so new
Creating Tinkers: Never cease
To fuel the Flames of Man's Ascent
With Wisdom, Wanton, Ideas lent!

The Desire to rise above such
Simple Peoples, our very Past,
And small celestial Spheres to touch
Defines that Trait of ours to last:
That Wanderlust for wayward World!
Myriad Maps to us unfurled

As Earth and Sea we plumbed to seek
The Planet's Secrets buried deep,
Such Wisdom fed to grow and keep
Our Human Race at highest Peak.

In our Minds new Worlds crystallize,
Formed of Fancy and Thought as one,
Borne by Works that before were done
To that same grand Goal realize:

That this proud People may grow and prosper
In an Age of Silicon and Phosphor.

In Which I Call Upon Tycho Brahe

Emily Kagan Trenchard

Tell them about your pet moose
that got so drunk at your party it fell down the stairs
and broke its foreleg.
Tell them about the instruments.

Tell them about the nights you stood with chin
pointing to the heavens and lips quietly mouthing
the positions of the stars. Tell them the stars
are not just stars. The heavens, neither perfect nor immutable.

Tell them about your nose, sliced off in a duel,
and how you covered the windy hole in your face with a brass replica,
lashed it to your head with leather straps,
kept it and the twitching raw skin beneath well greased.

Tell them how you taught a generation to see. Tell them
two good eyes were all you needed to chart the heavens,
and for everything else, there was your psychic midget named Jep.
Tell them the answers are there, in the charts.

Tell them about the commoner you refused to actually marry,
though she gave you 8 children and wore the keys to your castle on her belt.
Tell them at their death stars, too, do not go quiet; they are as furious
and destructive as drunken men of means; they all fall in on themselves.

Tell them how you passed on those charts like Pandora. Like, what now?
Like the boy Kepler could be anything other than what history needed.
Tell them those ellipses were drawn from his gaping mouth.
Tell them you were for Kepler, as Kepler was for Galileo, and how

he cracked open the head of a God by smashing it against the sky.
Tell them how you loved a good party.
Tell them how the wild and ethereal world
is always in attendance.

Kepler

Allene R. Nichols

We are worlds within worlds within worlds
as we whirr through the whorled arms of the Milky Way
through the arms of our mothers
the arms of our sons
the race to become deadly,
and face the mushroom cloud,
to immolate ourselves
on the tiny whirls of electrons in orbits
around miniature planets.

But there are other worlds.

Kepler flew
on a cloudless night
with afterburners bright
in the Florida air
to answer the question
"Who's out there?"

From the moment of launch,
its heart on fire,
it soared true.
Its stages fell away in infernos
that challenged the coldness of space.

Now the distillation of our plans
to find new worlds around old stars
blinks at Orion with an inquisitive eye.

Solar Symphony

Christine Valentine

Astronomers have recorded heavenly music
Bellowed out by the sun's atmosphere.
(Yahoo news 4/19/07)

Oh what can I do to hear the solar symphony?
If I take two tin cans, string them together,
Point one at the sun and listen in the other,
Will I hear it?

Can I look it up on the Internet and
Download it to I-Pod? Does NASA sell
Recordings of it on a compact disc?

Maybe if I build a crystal radio
I'll be able to tune in to sun songs,
Or maybe there is an 800 number
I can dial, so that I can hear the melody.

If I buy a new digital hearing aid,
Turn the volume up high,
Will I hear the serenade of the Sun's
Magnetic resonance?

Perhaps the sun needs to be wooed?
Maybe the answer is to send music
Out into the solar universe, first.
On the morning of summer solstice
When the sun is closest to the earth,
I will take a drum and sing.
I will play a Scottish reel on my violin.
I will sing nursery rhymes.
A lullaby.
Hum.

Then I will sit quietly on the hillside
And listen once again
To see if I can hear the magic
Of the solar symphony.

Sunspots Explained

Art Elser

... researchers announced that a jet stream deep inside the sun is migrating slower than usual through the star's interior, giving rise to the current lack of sunspots. (NASA Science News)

Scientists using telescopes
and pressure instruments
and the new study
of helioseismology
have mapped the sun's
subterranean jet stream
and discovered why sunspots,
violent events on the sun's surface,
have lessened.

Might we turn
those instruments earthward
to create helioseismic maps
of subterranean jet streams
that cause earth spots, violent
events on the earth's surface?

Those jet streams
could have triggered
Wounded Knee, Antietam,
Gettysburg, and Sand Creek.
Helioseismic maps
certainly would explain
Dachau, Dresden, Nanking
Hiroshima and Nagasaki.

Had we known sooner,
we might have reduced
the suffering in Bosnia,
Palestine, Darfur, and
the World Trade Center.

Universal Kiss-Off

Peter Payack

When she told him she "needed some space",
Yves' first thought was to give her all the space she wanted,
would the space between earth and the moon be enough?

Then he thought,
they had a long, close relationship,
maybe 250,000 miles wasn't sufficient!
So he figured he'd grant her wish
and give her all the space between Earth and Mars.
Now, we're talking 300 million miles here,
so maybe that would do.

Unfortunately they are planning a mission
to that faraway world, so maybe that
wouldn't work out either,
"too close for comfort," he thought.

How about, he reasoned, just beyond
the edge of the solar system
to the Kuiper Belt where comets originate?
But that wasn't good enough either,
as some comets have cyclical periods
where they fly by earth.
Say, like Halley's comet,
which returns every 87 years.
He didn't like the idea
that she could return,
even that far in the future.

Finally, an idea flashed before his eyes
like a brilliant shooting star:

If she really wanted space,
he'd give her the whole universe:
The complete cold, cataclysmic, lifeless,
dark, barren, energy-suckin' black hole filled,
matter annihilating antimatter strewn,
dark energy infested, purposeless,
entropic doomed
universe.



Fate of the Universe

Lucille Lang Day

New stars hatch in the Eagle Nebula
in vast pillars of dust and dark gas,
crowned with glowing streamers.

Old stars expand, casting off
colorful wreaths—carbon,
oxygen, nitrogen, hydrogen, helium.

Nothing lasts. Galaxies whirl
through the vacuum, away
from each other, at increasing speeds.

The Earth gave up the dinosaurs,
lumbering through forests
of giant ferns, and mastodons

with curved tusks and reddish hair.
Now frogs and toads might disappear,
prelude to the planet's final gasp.

When the sun dies, the sky will fill
with sparkling beads. Seas
will boil away, mountains incinerate,

but as carbon from fusion in old stars
scatters through space, new generations
of stars and planets will coalesce

before all matter is thinly spread
through endless cold and black,
and perhaps in a distant galaxy,

men and women will write poetry
on stone tablets in a new language,
listen to music, kiss in warm beds.

Space Walker

Michael Filimowicz

This hero's stellar is below
Earth's constellations he follows
Its whites and its blues

The greens and their hues
A material never used
By any servant of the muse

You past poets did your bit
But never so in orbit
Nor at eighteen thousand miles an hour too

einstein's compass

Trevor Scott Barton

experiencing a miracle
 trembling with excitement
sparking genius
 creating a world of thought
flying certainly away from the miraculous
 Euclidian Geometry in a small book
finding the miraculous in clarity and certainty
 gravity
Rydberg's Constant = $2\pi^2 e^4 m / h^3 c$
 landing uneasily in chaos
wandering and wondering in the quantum universe
 seeing God playing symphonies on strings

Misnomer

Laura Madeline Wiseman

As I sort and scoop compost into the wheelbarrow
the Martian coughs and says, *We're not from Mars.*
I crouch on my knees and push aside brittle leaves

from the worms and refuse. I respond, *If not Mars,*
where are you from? I glance from the hollow stalks
of sunflowers and withered arms of tomato plants.

The Martian sweeps away a swath of pine needles.
In the dry silt beneath, the Martian draws a canal
in a desert of saguaros. Next the Martian sketches

bison on glacial ice and spears inside Mammoth Cave.
Third, the Martian traces a labyrinth, a ball of twine,
and Minoans writing lists in a dead language

no one has yet to translate. *You're a lost people,*
I infer, *an unknown.* The Martian adds a forth image,
a galaxy of stars and planets and a medieval sundial.

All these people, the Martian says, *have been named by you*
because you didn't know what they called themselves.
I begin to ask about the outline of three large moons,

but the Martian grabs my hand and pulls me up
until my palm is flat against the Martian's green chest.
Shhh, the Martian says, *We've never been lost.*

Commencement

The Martians wander from the red planet. Some drive
silver spaceships to explore their moons. First Phobos
whose crater-scarred, rough body moves West to East

every eight hours. In her Stickney Crater they plant
flags and snap pictures of her insides. Six miles across
and nearly one half Phobos' grooved face, the only face

she shows daily, as she inches closer to Mars waving
the Martian flag. It ripples without wind. On tiny Deimos
the Martians also pound shoeprints in the soft surface

of the pock-marked celestial globe. Covered in dust
and debris, Deimos too offers only one side. In the sky
this terror moves every thirty hours. And Martians watch

their friends escape velocity for a blue-green swirl
which could sustain life. Each twenty-four hour day
Martians touchdown in the nearest world in likely spots.

But the red plant waits. Canals dry up. Their sides cave.
Each summer, polar caps recede. During the 687 days
of the Martian year, microbes burrow underground,

seas vaporize and leave behind enormous depressions
which appear as if nothing could live. Ghosts remain
surface side, those guardians of our darker pulse.

So We Decided to Build a Spaceship

Another issue is what the astronauts would do at Mars. Should they stay close to a base and operate remote robots

*at various locations around the planet, or should they go on extended trips from the base and explore, thereby incurring the risk of being stranded?*¹

The Martians gave us specs for outer space design.
From the shopping list I had trouble only with krypton,²
but the Martians had some extra, so it was okay.

Once I got it all in my backyard, they took over.
The Martians spread tarp, constructed a hanger
rigged with solar panels to keep electric bills down.

They worked for hours with bright tools emitting sparks.
Inside the flying saucer I pressed green carpet
into tack strips and washed the alien craft portholes.

When I loaded in thirteen economy sized boxes
of astronaut food from the science center,
the Martians snickered and shook their heads.

Three weeks later, a Martian took my arm
for a UFO personalized tour.³ We walked for days.⁴
When I got hungry, I was given space ice cream.

When I asked when they'd take me to Mars
they hugged me, stroked my chin, and put me to bed
under a window of our solar system of stars.

[1] Several spaceships have been built for trips to Mars. Some have landed, some orbited, and some stopped communicating almost immediately. In 1971 the first ship turned silent after 20 seconds. In 1989, another silenced after a few days. Some ships, like Beagle 2 in 2003, simply disappeared for unknown reasons after allegedly descending to the Martian surface.

[2] The Martian atmosphere consists of nitrogen, water vapor, and the noble gases like krypton. Superman is said to be allergic to kryptonite. Superman is from Krypton, not Mars.

[3] Though scientists in the original Apollo program were sure they could deliver a person like you or me to Mars, no one then or since is sure they would be able to get those persons back.

[4] Two theories on the time necessary for Martian visitations are as follows: 1) an opposition-class mission would be a 500-600 day tour with 30 days of Maritain site-seeing; 2) a conjunction-class mission would take 900 days for travel to provide 550 days of Martian tourism.

Heat Death

Louis Gallo

And what if, as the experts now proclaim,
the cosmos will expand forever
because there's not enough black fat
to break it down and hurdle back
toward the primal egg?
What if, in some future so remote
it verges on the ridiculous,
all that's left of our old shebang
are a few desolate, dead atoms
more massive than the current universe?
None of this concerns us, right? --
not you and I
who have more time on our hands
than skin,
who, tomorrow, plan another laugh
or two.

What Wakes Me Up

Peggy Landsman

Dreaming of hydrocarbon snow
falling on Titan's methane lakes

of egg-like Europa cracking its shell
hatching in the dark

of geysers spraying nitrogen
over Triton's strange terrain

I dream of the Cosmos banging
and banging once again.

The Realm of the Nebulae

Daniel Hudon

I asked the galaxies a question:
how has the strength of your clustering changed
over the last thirteen billion years?

The galaxies said nothing.
They didn't even ask me to speak a little louder;
considering their enormous million light year distances.
I had no idea if I was on their wavelength.

Do you mind, I said, if I measure your two-point
correlation function? I'll take some long exposure photos
and run some statistical tests. You won't have to do anything.

The galaxies said nothing.
Their light was bold and steady.

I want to know if any of you have merged, I said.
Could I get a show of hands?

The galaxies said nothing. None even snickered.
One, a large spiral, continued to spin gracefully
so that its arms trailed lazily behind. In another,
deep within its luminous fog I could barely make out
the glowing light of an exploding star.

How did you form, I shouted.
Why do you have so much dark matter?
Do you follow universal laws?

The galaxies said nothing.
They didn't even shrug.

Yet it Does Move

Michael Gregory

Eppur si muove
- Galileo

The cranes are gone again, gone in the night
with no one noticing until the silence
this morning and new warmth before the sun

reminding us that the earth we stand on clinging
by the soles of our feet to keep from falling
into the air and sky where they have gone

is not flat and is in fact turning
around itself around its dying star
revolution after revolution

clockwise and counter- at the same time
the poles tilting on their axis both toward
and away from the sun shifting position

so equator, magnetic north and south
Tropics of Cancer and Capricorn are nothing
fixed but imaginary points and lines

drawn on maps of bodies of land and water
that are themselves afloat on a fluid mass
we populate at our peril with fantasies

of changeless being essences and meaning
by which we mean something that isn't just a thing
that isn't becoming doesn't exist but is

a feeling a wish a dream a presence a faith
that men may believe in and die and kill for
scienza religione amore wheels

within wheels the music of the spheres
while we try to keep our own wheel turning,
chop wood, haul water, appreciate the spring

aromas and colors, the leaves and blossoms working
their way from bulb and stem and branch, the songs
of the smaller birds still here and those returned.

the traveling salesman

Samara Golabuk Crutchfield

A traveling salesman crept through stars
with eggshell eyes and dark matter pockets.
He rapped on a limb of moon, pounded firmament,
busked wares in precarious decibels.

When no one came 'round to see the ruckus
or play sad sucker to his blood-boiled Barnum,
he said,
"to hell with time," and winked
to an unparticularly non-temporal un-when
or so I heard, leastways, you can't get his
salves and ointments around here anymore.

The Ladder Nebula would sooner have you climb than launch,
but this is known, and avoidable.

Quasar

Geoffrey A. Landis

A brilliant beacon in the night
across the universe, in distant dark
outshining the galaxy surrounding it, bright
as a trillion stars, a distant spark
a blue white arc.

The black hole at a galaxy's center
infalling matter compressed to incandescence
It devours its galaxy, leaving dust and embers
Ripping matter to its essence
jets of plasma luminescence.

So fierce, so hot, so luminous:
so beautiful, so dangerous.

Sunbathing

Peggy Landsman

I see this stretch of beach before me
I see my feet, one foot propped up on the ankle of the other
I see my hands, half buried in the sand
I see myself and the beach together beneath the sun

I see the sun propped up by what I do not see
I see the sun in the moist, transparent sky

I see beyond...

Beyond this terrestrial blue
Beyond this terrestrial warmth
Beyond all my energies and moods
Beyond all the footprints I may add to this stretch of beach

Beyond all I can finally grasp of all this sand seashell seaweed
sea foam surf sound seagull sea breeze stretch of beach

Beyond where space probes scan
Beyond where Hubbell's power sees
Beyond where Hawking's light cones meet the *über*-timeline
Beyond the black hole
Beyond the wormhole
Beyond...

I see this stretch of beach before me.

Infinities

Lucille Lang Day

The infinitesimal infinity dances -
a speck of force
at the edge of a petal, where
electrons are leprechauns
that always slip away
and have no quarks.

The hand-sized infinity opens -
an ivory rose
unfolding in the fifth
through tenth dimensions.

I keep it in a vase
on a lace-covered table
in the family-sized infinity
whose rooms collect dust
galaxies composed
of mites and minute
particles of skin.

Set theory says there is
an infinite number
of infinities of different sizes,
but as each leaf curls
and one by one
the petals let go,
I wonder if omega
might equal one
and the stars might slow
and dim like fireflies.

No! Let the universe
shrink to a pinhead,
then explode in flames
where possibilities bloom
endlessly again
among blue-striped roses
in new time and space.

in the void**Joseph Farley**

sand
in
a pail,
poured out
onto a white beach
all those small grains lost in the crowd.

man
lost
alone
in city's
loud people rush crush
faces dissolve into blank smears

moons,
stars,
planets,
universe,
lost in light and dark,
the vast emptiness of space-time

Dark Flow

Robin Chapman

Somewhere, more than fourteen billion light years away,
must be a massive structure pulling us,
a lip of pour-off, the NASA astrophysicists say,

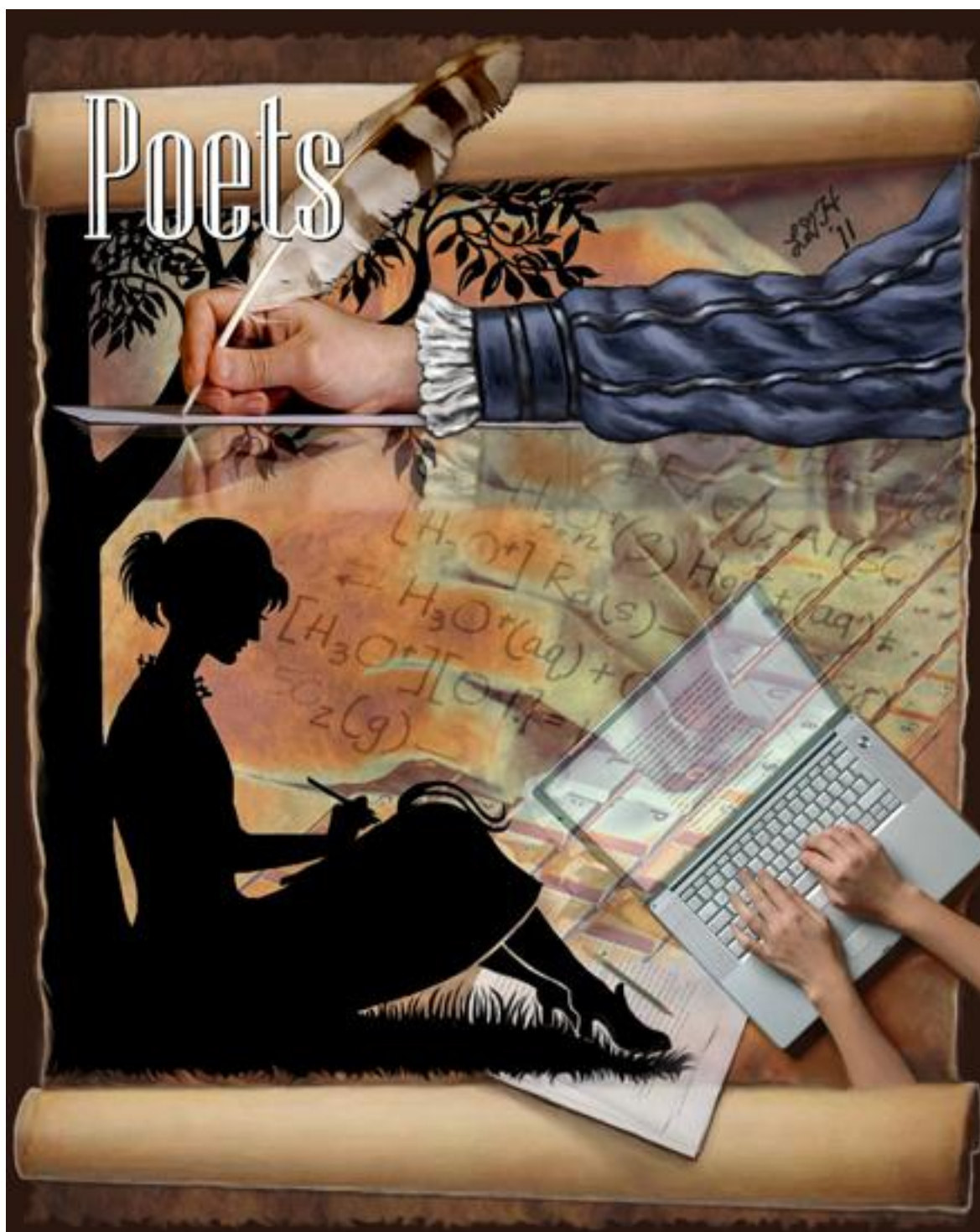
escarpment toward which this whole universe is rushing
like Niagara, at two million miles an hour—edge
of all we know, not just our eddies of dark energy,

our local galactic whirlpools around black holes,
our hidden structures of dark matter riprap,
beyond even the event horizon itself,

as if there were some unseen cliff
toward which the whole of spacetime flows. And when
we've thundered down that precipice,

what will we find? Some champagne bubble
of Mandelbrot equation, a new multiverse
where everything repeats

on smaller or larger scale? Big-bangs starting up
everywhere we look? Or will it be a vast, blank pool
where, recomposed, we float in oceanic calm?



Tiel Aisha Ansari is a Sufi, martial artist, and data analyst living in the Pacific Northwest. Her work has appeared or is forthcoming in *Windfall*, *Islamica Magazine*, *Untitled Country Review*, *Verseweavers*, *The Lyric*, *Barefoot Muse*, and the *VoiceCatcher* anthology from Portland Women Writers among other print and online venues. Her poetry has been featured on KBOO, Prairie Home Companion and MiPoRadio, has won state awards, and has been nominated for a Pushcart Prize. Her collection *Knocking from Inside* is available from Ecstatic Exchange. You can visit her online at her blog, *Knocking from Inside*.

Boghos Artinian, M.D. was born in Beirut in 1942. He attended the International College from 1950 to 1961, then the American University of Beirut from where he graduated with an MD in 1968 and did one year of residency in Internal Medicine at the American University Medical Center. In 1969 he traveled to Saudi Arabia where he served as an Internist at the Tapline Base Hospital in Arar. There he invented the stereostethoscope (*The Lance*, March 11, 1970.) In 1972 he left with his wife for training in Internal Medicine in Scotland and England and got his MRCP(UK) in June 1973. He worked a further 18 months in Saudi Arabia and returned to Beirut in 1975 where he has been in private practice until the present. He started writing scientific poetry in 1986 and his first published poem was *Pacing in the Tomb*, which appeared in the *Saudi Medical Journal* in 1986.

Paul Barclay is an ex-pat Canadian poet who now lives in South Korea. He studied English literature at the University of Manitoba and the University of Toronto, where he earned a Master's degree with a thesis on Milton's prosody in *Paradise Regained*. He taught literature to freshman students at the University of Manitoba while undertaking doctoral studies; and has since taught English language in Canada, Japan, and

Korea. He currently teaches at Sungshin University, in Seoul. His interests in poetry and life are eclectic, and include story-telling, agit-prop, haiku, expressionism, throat-singing (Tuvan), collage, and the history of ideas. A chapbook of poems (*Creole*) was published by Pachyderm Press (out of St. John's College, at the University of Manitoba) in 1993. Recent publications may be found in a variety of journals on the Internet.

Trevor Scott Barton is an elementary school teacher in an inner-city school in Greenville, South Carolina. He received his BA in English from the University of North Carolina at Chapel Hill and his Master of Arts in Teaching from Converse College. Albert Einstein and Galileo Galilei are his scientific heroes. He likes to think of words as particles flying chaotically around the quantum universe or moving orderly under the influence of gravity. He is married to Robin Gardener Barton and they have two boys, Bakary and Zeke.

Daniel Bogogolela says: I am a poet and writer from South Africa. You can read my poems on www.maelwedtshwn.blogspot.com and some under the pen name "wren" on www.allpoetry.com. I recently won a short story competition on a South African website, allaboutwriting.com.

Cathy Bryant is an award-winning writer who is a regular on the live poetry circuit in and around Manchester, UK, and at workshops and events around the country. Her poems and stories have been published on four continents and she has won various prizes, most recently the prestigious Marple Humorous Poetry Prize in 2010. Cathy co-edited the anthology *Best of Manchester Poets* and also launched her debut collection, *Contains Strong Language and Scenes of a Sexual Nature*, last year. She is currently busy editing *Best of Manchester Poets volume 2*. To

contact Cathy, you can e-mail her at cathy@cathybryant.co.uk

Daniel C. Bryant, M.D. writes: I am a retired physician in the Portland, Maine, area, and have been an off-and-on writer for the last fifty years. My poetry and short stories have been published in a variety of medical and non medical publications; my novel, alas, is still quietly waiting in my hard drive. I have accumulated an annotated list of physician writers that is available on the Internet at <http://library.med.nyu.edu/library/eresources/featuredcollections/bryant/roster.html>

Robin Chapman is a psychologist and poet who grew up in Oak Ridge, Tennessee, one of the Manhattan Project towns. She is an emerita Professor of Communicative Disorders at the University of Wisconsin-Madison, USA, and author of six books and five chapbooks of poetry, including *Images of a Complex World: The Art and Poetry of Chaos* (with J.C. Sprott's fractals), winner of the Posner Poetry Award, and *Abundance*, winner of the Cider Press Review Editors' Book Award. She received the 2010 Helen Howe Poetry Prize from Appalachia. Her poems have appeared widely, including the Canadian journals *The Fiddlehead*, *The Dalhousie Review*, and *The Antigoniish Review*, and the US journals *The American Scholar*, *The Hudson Review*, *OnEarth*, and *Poetry*. Her book *The Eelgrass Meadow* (Tebot Bach) is in press.

Theodore Christou, Ph.D., is an Assistant Professor at the University of New Brunswick in the Faculty of Education. He is a former elementary school teacher from Cyprus who was raised in Scarborough, Ontario. Theodore completed his doctorate at Queen's University in the Faculty of Education. His research primarily concerns the history and philosophy of education. Theodore's teaching presently concentrates on Curriculum

Studies, the Social Studies, and Worldviews in Education. His first authored book of poetry is forthcoming from Hidden Brook Press, titled *an overbearing eye*. Theodore lives in Fredericton, New Brunswick, with his beloved wife, Glenda.

Elizabeth Clark says: I am forty six years old, married with three now grown-up children, British, and living in the UK. I have written for my own pleasure for many years and have previously had work published in *Candelabrum* poetry magazine and also earlier this year as one of the winning entries in the Stratford-upon-Avon Literary Festival Poetry Competition book, entitled *My Home*. I am inspired to write poetry by all manner of things, but particularly animals, nature and relationships. In 2010, as a runner-up in Stratford-upon-Avon's Literary Festival Short Story Competition, I had my entry published as part of a collection of winners. For the last fourteen years, I have worked in a resource base within a mainstream secondary school, producing materials in modified large print and Braille for visually impaired students. I recently completed my first novel, a children's ghost story, and am currently working on a second book. Writing is my passion!

Barbara Crooker's books are *Radiance*, winner of the 2005 Word Press First Book Award and finalist for the 2006 Paterson Poetry Prize; *Line Dance* (Word Press, 2008), winner of the 2009 Paterson Award for Excellence in Literature; and *More* (C&R Press, 2010). Her poems appear in a variety of literary journals and many anthologies, including *Good Poems for Hard Times* (Garrison Keillor, editor) (Viking Penguin) and the *Bedford Introduction to Literature*. Her awards include the 2007 Pen and Brush Poetry Prize, the 2006 Ekphrastic Poetry Award from *Rosebud*, the 2004 WB Yeats Society of New York Award, the 2004 Pennsylvania Center for the Book Poetry in Public Places Poster Competition, the

2003 Thomas Merton Poetry of the Sacred Award, the 2003 April Is the Cruellest Month Award from Poets & Writers, the 2000 *New Millennium Writing's* Y2K competition, the 1997 *Karamu* Poetry Award, and three Pennsylvania Council on the Arts Fellowships.

Samara Golabuk Crutchfield is a self-employed graphic designer and mother of two living and working in Gainesville, Florida, USA. She is completing her undergraduate education in English / Creative Writing. Her favourite poetry to write is fictional accounts of true things (she also thinks astrophysics is pretty neat.) Her work has appeared in such publications as *Strong Verse*, *5x5*, and *Lamplighter Review*. In 2010 she received two Pushcart Prize nominations.

Allison Cummings is an Associate Professor of English at Southern New Hampshire University in Manchester, New Hampshire, where she teaches courses in expository writing, poetry writing, and twentieth-century American literature. She has had poems and essays published in journals such as *Passages North*, *The Literary Review*, and the *Dos Passos Review*, and has published scholarly articles on contemporary poetry in journals and edited collections. She has also been a poetry editor for *The Madison Review* and *Amoskeag*.

Meredith Danton is editorial director in the Office of Communications and Marketing at the University of Miami, where she dots the i's and crosses the t's of various publications. She is also pursuing her MFA in poetry at the University of Miami, which has her crossing her eyes while doting on the tease of words in their evocative meanings and sounds. She was inspired to write *Prozac Ocean* - which ponders what could happen if antidepressants were to saturate the marine ecosystem - after reading *Forage*, a collection of environmentally themed poems by Rita

Wong. Her poem *iPhonomenon* is an attempt to explore a growing human tendency to develop stronger bonds with technology than with other humans. Meredith is a recipient of the Alfred Boas Prize of the American Academy of Poets, and her work has appeared in the journal *Reconstruction: Studies in Contemporary Culture and Floorboard Review*.

Lucille Lang Day, Ph.D. has written poetry collections *The Curvature of Blue*, *Infinites*, *Wild One*, *Fire in the Garden*, and *Self-Portrait with Hand Microscope*, which was selected by Robert Pinsky for the Joseph Henry Jackson Award. She is also the author of a children's book, *Chain Letter*, and three poetry chapbooks: *God of the Jellyfish*, *The Book of Answers*, and *Lucille Lang Day: Greatest Hits, 1975-2000*. She also writes fiction and creative nonfiction, and her work has appeared widely in magazines and anthologies. She received her M.A. in English and M.F.A in creative writing at San Francisco State University, and her M.A. in zoology and Ph.D. in science and mathematics education at the University of California at Berkeley. A visiting scientist at Children's Hospital Oakland Research Institute, she served 17 years as Director of the Hall of Health, a museum in Berkeley. More information at <http://lucillelangday.com>

Meg Eden was dating a Physics major, which naturally made life rather interesting. She now has a love for science, particularly Biology and is studying to better understand mental disorders. Her poetry and fiction has been published in various magazines and anthologies, including *The Claremont Review*, *The Science Creative Quarterly*, *The Rune*, and *Crucible*. She has won various writing awards, including Columbia Scholastic Press Association's Gold Circle Award CM, Scholastic Writing and Arts' Gold Key Award, and Blue Mountain Arts' Poetry Contest. Check out her work at: <http://artemisagain.wordpress.com/>

Art Elser, Ph.D. is a retired technical writer from Denver who has a doctorate in English Literature and has taught writing for over 30 years. He has been published in *Voicings from the High Country*, *Owen Wister Review*, *Clark Street Review*, *Emerging Voices*, *Serendipity Poets Journal*, *Harp Strings Poetry Journal*, and *A Bird in the Hand: Risk and Flight*.

Alvin G. Ens is a poet, a writer of short fiction and prose articles, a family historian, and an editor. He was a high school teacher of English and later a teacher with Corrections Canada, but is now retired and writes instead. He holds a Master's Degree in Education, a Bachelor of Arts and a Bachelor of Christian Education. He is a Saskatchewan native who married into Manitoba but now lives in British Columbia, Canada. He has been published in various magazines both secular and Christian, in a variety of anthologies and on the web. He is a member of Poets Potpourri Society (Abbotsford), Fraser Valley Christian Writers (Abbotsford), Inscribe Writers (based in Alberta), Word Guild Canada and Canadian Poetry Association. He has written seven books. He is the husband of Irene, has three children and two grandchildren and likes to garden, to play golf and curl; and he loves to watch the Vancouver Canucks hockey team.

Lee Evans lives in Bath, Maine, USA, and he works for the local YMCA. He has published more than two hundred poems in such journals as *Contemporary Rhyme*, *The Christendom Review* and *Decanto*. His four poetry collections, *Maryland Weather*, *Nor'easter*, *My Kingdom Come* and *Sixty Poems* are available on Lulu.com.

Joseph Farley edited *Axe Factory* for 24 years. His books and chapbooks include *Suckers*, *For the Birds*, *The True Color of You*, *Longing for the Mother Tongue*, and *Waltz of the Meatballs*. In addition to

poetry, he writes science fiction. He makes his home in Philadelphia, USA.

Kane X. Faucher, Ph.D., is an assistant professor at the University of Western Ontario in London, Canada. He is the author of 10 books and has placed over 1000 poems, articles, short fiction, and reviews internationally. He currently lives and works in London, Canada. He is a recent recipient of the &Now Award for Best Innovative Writing, and has recently released a collaborative poetry post-code experiment entitled [+!] with Matina Stamatakis and John Moore Williams. His next novel, *The Vicious Circulation of Dr. Catastrophe*, is coming out in 2010 with Crossing Chaos Enigmatic Ink. He is also a co-editor of the academic journal *Autopsia*, and associate editor of the journals *The Poster* and the *Semiotic Review of Books*.

Michael Filimowicz is an American Midwest transplant currently residing in Vancouver, British Columbia, where he teaches at Simon Fraser University. His writing and art have been published and exhibited in leading journals and festivals internationally.

Louis Gallo advises that his work has appeared in *American Literary Review*, *Glimmer Train*, *Berkeley Fiction Review*, *Rattle*, *Contemporary American Voices*, *Poetrymagazine*, *New Orleans Review*, *Texas Review*, *Missouri Review*, *The Ledge* (pushcart nominee), *Raving Dove* (pushcart nominee), *Xavier Review*, *bartleby-snopes*, *storySouth*, *Oregon Literary Review*, *Tampa Review*, *Poetry Midwest*, *Wide Awake in the Pelican State* (LSU anthology) and many others. He was born and raised in New Orleans, USA, and now teach at Radford University in Virginia. Two poetry chapbooks were printed in 2010.

Patricia Louise Gamache, at the age of 74 lives in Sidney B.C., Canada, still enjoying the good life and retirement. Patricia has a firstyear College Education, is Canadian and has resided in B.C. all

her life except for two years in Alberta. Many vocations have filled her working years, to name a few; Banking, Psychiatric Nursing, Finance, a Women's Jail, Farming (in Buick B.C.) and School Secretary. Her last job and the most enjoyable one, she states, was as Administrative Assistant at the Head Office of the Pantry Hospitality Corporation, where she remained for fifteen years. Patricia likes all types of poetry and writes when the mood strikes her. She enjoys family and friends, gardening, shopping, reading and writing. Her two kittens are now 5 years old are still training her and the wily duo, still consider her a slow learner.

Lewis Gardner's poems have appeared in a number of anthologies and other publications, including more than 60 of his poems in the *New York Times*. A staged version of his collection *Tales of the Middlesex Canal*, which was originally performed at New York City's Greenwich House Theater by a cast led by Academy Award-winning actor Kim Hunter, has been presented in several locations in upstate New York and Massachusetts. He has taught writing workshops for New York University and the New Jersey State Council on the Arts Poets in the Schools program. Twice a finalist for the Walt Whitman Award, he is coauthor of *Children of the Wild*, a study of feral children. His play, *Pete & Joe at the Dew Drop Inn*, appeared in *Best American Short Plays 2008-2009*.

Venetia Ghozlan writes: I am a 52 year old of mixed cultural heritage, an atheist, humanist. I work for the U.S. Social Security Administration (my daytime grunt earn the gruel gig) and have written since I could breathe...or at least think, cognitively. I am inspired by the whispers in the wind, the screams contained in the thunder and the silence of mutes. A number of my poems have been published or are pending publication.

Tracey Gratch lives in Quincy, MA, USA with her husband and their four young children. Her poems have appeared in online and print publications including: *Annals of Internal Medicine*, *Boston Literary Magazine*, *The Eclectic Muse*, *The Flea*, *Loch Raven Review*, *Lucid Rhythms*, *Pirene's Fountain*, *The Poetry Porch Sonnet Scroll*, *Snakeskin*, *Soundzine*, *Victorian Violet Press* and *The Yale Journal for Humanities in Medicine*.

Michael Gregory is author of several poetry books and chapbooks including, most recently, *re Play* (Pudding House, 2009). His poem *Yet It Does Move* was included in *Mr. America Drives His Car, Selected Poems 1978-2010*, from Education in Reverse Press. Until retirement a few years ago, he was for many years an internationally-recognized toxics activist, and has authored numerous articles, papers and monographs on environmental politics, and well as being an active participant in development of such citizen right-to-know programs as the North American Pollutant Release and Transfer Register and the Stockholm Convention on Persistent Organic Pollutants. He holds an interdepartmental BA in History, English and Philosophy from the University of Toledo, an MA in English from Penn State, and has done post-graduate work at the University of California, Irvine and the UCLA Center for the Study of Comparative Folklore and Mythology. Since 1971, he has lived off-grid in the high desert grassland of southeast Arizona, ten miles from the US-Mexico border, where he raises organic fruits and vegetables.

Thomas G. Hadley. "Torg" was born during Seattle's record-setting blizzard of '50. Evergreen Point on Lake Washington, (in a remodeled boathouse), was his first home. He first heard the poetic muses at the onset of the counter-culture flowering of the Sixties. From being a sous chef to an Army Staff Sergeant, to Ashkelon and back, he's

knocked about a bit. He and his family have come 'round full circle to return to where it all started; the City of Subdued Excitement. Nowadays, he and his wife Goody, and their four doggies live in a log home by Chuckanut Creek.

Chad Herman says he is a poet evolving in Largo, Florida, USA. He has been publishing poetry since kindergarten, when he became inspired to write a piece of *Apples and Pumpkins*. The poem was published and the poetry has slipped off his pen and into the collection of International poets, the Vancouver Library of Poets, into space on Voyager 8, *Write* magazine, and *Mobious Literary Journal*. He holds a B.F.A. in English Literature and Writing. He spends his days writing poetry, promoting non-violence and the eradication of domestic violence. When not writing or trying to change the world, he's uplifting his wife, four kids and a pack of 5 dogs. In the end, he says, we all have the ability to change the world – Chad has decided to do it on a daily basis through his writing, his work and his daily teachings.

Lynn G. Hocker, the artist who illustrated this book, has drawn all of her life. She holds a Bachelor's degree in Fine Arts and a Masters degree in Psychology with Art Therapy emphasis. Her drawings have been published in magazines and books including *A Time to Dance* by Milli Laughlin, for which she created the cover. She has designed many rubber stamps for the Lookin' Good Trading Company, and worked on the animation for the song *You're Sixteen* that was shown on Ringo Starr's 1978 television special. Beyond drawing and painting, she enjoys creating detailed Czech bead earrings and necklaces. She's had some unusual jobs including being the guardian for a child actor for two years, and babysitting a son of Mark Hamill (Luke Skywalker of *Star Wars* fame). Born in Santa Monica, California, she now lives in Oregon where she enjoys the rain, pine trees,

and the company of her three cats, Tai-Chi, Blueberry and new kitten, Minuet.

Paul Hostovsky's poems have won a Pushcart Prize, the Muriel Craft Bailey Award from *The Comstock Review*, and chapbook contests from Grayson Books, Riverstone Press, Frank Cat Press, and Split Oak Press. He has been featured on Poetry Daily, Verse Daily, The Writers Almanac, and Best of the Net 2008 and 2009. He has three full-length collections of poetry, *Bending the Notes* (2008), *Dear Truth* (2009), and *A Little in Love a Lot* (2011), all from Main Street Rag. He works in Boston as a sign language interpreter. His website is www.paulhostovsky.com.

Daniel Hudon, originally from Canada, teaches natural science at Boston University. He has had recent writing published in *Swink*, *The Antigoneish Review*, *The Wilderness House Literary Review*, and *Clarion*. His first book, *The Bluffer's Guide to the Cosmos*, was published in 2009 by Oval Books (UK) and he just published a chapbook, *Evidence for Rainfall*, with Pen and Anvil Press. Some of his writing links can be found at people.bu.edu/hudon. He lives in Boston, USA.

Vivekanand Jha is a poet and research scholar from Darbhanga, Bihar, India. He has a Diploma in Electronics, Certificate in Computer Hardware and Networking, M.A. in English, and is completing a Ph.D. on the poetry of Jayanta Mahapatra. He authored five poetry books: *Hands Heave to Harm and Hamper*, *Spam: A Satire on E-Sex*, *Songs of Innocence and Adolescence*, *My Poems Falter and Fall* and *Time Moves Clockwise Only*. His work is published in almost fifty magazines round the world. Besides various research papers, his poems are anthologized in : *The War Against War Anthology*, ed. by Prince Kwasi Mensah (USA), *Anthology of Canadian Stories IV*, Edited by Ed Janzen (Canada), *Anthology on the theme of America* ed. by Vernon McVety

Jr., *We Come from One Place*, edited by Prince Kwasi Mensah(USA), *Savant 2010 Anthology*, ed. by Rose And Alan (England), and *Poetry Anthology* ed. by Dr. Ram Sharma (India).

Michael Johnsen writes: Just shy of 64 years of age, I completed my Master of Fine Arts degree in creative writing through the Rainier Writing Workshop MFA program at Pacific Lutheran University. My work is sourced in the back alleys of life, influenced in great part by Raymond Carver and Charles Bukowski. It is both muscular and cerebral. Throughout run the discordant tones of brutality, anger and rage. There is fruitless searching, melancholy and irony. Yet at times, my narrator's discourse is vulnerable and redemptive. I have self-published one collection of poems titled, *Garage Sale*. My work has appeared in *Between the Lines*, *Clamor*, *Gloom Cupboard*, *Debris Magazine*, and *Crab Creek Review*. My website, *the seattle muse* (www.theseattlemuse.com), focuses on unpublished authors and literary resources.

Tim Kahl (<http://www.timkahl.com>) is the author of *Possessing Yourself* (Word Tech Press, 2009) He has published in *Prairie Schooner*, *American Letters & Commentary*, *Berkeley Poetry Review*, *Fourteen Hills*, *George Washington Review*, *Illuminations*, *Indiana Review*, *Limestone*, *Nimrod*, *Ninth Letter*, *Notre Dame Review*, *South Dakota Quarterly*, *The Journal*, *Parthenon West Review*, *The Spoon River Poetry Review*, *The Texas Review*, and other journals. He has translated German poet Rolf Haufs, Austrian avant-gardist, Friederike Mayröcker; Brazilian poets, Lêdo Ivo and Marly de Oliveira; and the poems of the Portuguese language's only Nobel Laureate, José Saramago. He appears as Victor Schnickelfritz at the video, poetry and poetics blog *The Great American Pinup*. He is editor of Bald Trickster Press, dedicated to works of poetry in translation into English.

Elizabeth Kerlikowske, Ph.D. writes: Raised in the Midwest, I was a tree climber and swimmer from way back. I spent my teenage years dancing in chorus lines and as a "go-go" girl. These activities ruined my knees and forced me to use my mind. My poem *Knee Replacement* is the outcome of my total replacement at age 55, young for that I am told. I write from life experiences, and although I am willing to lie for effect, everything here is true! I'm the mother of three: a banker, artist, and woodsman. I worked as a bait seller, ragtime pianist, poet in the schools, and scone maker before settling into teaching at Kellogg Community College. Dr. Kerlikowske is president of Friends of Poetry, a nonprofit that promotes poetry through the annual Poems That Ate Our Ears contest and a free community reading series. Her most recent book is *RIB* from Pudding House Press, and her work has appeared in many journals and zines.

Amy Kitchell-Leighty received her M.F.A. from Bennington College in 2009. Her recent poetry publications include *Main Street Rag*, *Bellevue Literary Review*, *Salamander Review*, and *Inertia Magazine* among others. Her poetry manuscript *Hickies* is currently looking for a good home. Amy lives in Illinois where she teaches at a local community college and a men's prison.

Geoffrey A. Landis, Ph.D. is a scientist, a science fiction writer, and a poet. As a SF writer, he has won the Hugo and Nebula awards for short fiction, and is the author of one novel, *Mars Crossing*, and a collection of short stories. His most recent novella, *The Sultan of the Clouds*, appeared in the September 2010 issue of *Asimov's*. As a scientist, he works at NASA John Glenn Research Center on projects as varied as developing technology for Venus exploration, advanced power systems for spacecraft, telerobotic exploration of the planets, and interstellar travel, and is a member of the Mars Exploration Rovers

science team. As a poet, he has won the Rhysling award for best science fiction poem two times. He has appeared on a number of television programs, most recently *Michio Kaku's Sci Fi Science: Physics of the Impossible*, where he explained the concept of floating cities on Venus.

Peggy Landsman's work has been published in many online and print literary journals and anthologies, including *Iodine Poetry Journal*, *Bridges*, *Breathe: 101 Contemporary Odes* (C&R Press), and *The Muse Strikes Back* (Story Line Press). Her poetry chapbook, *To-wit To-woo*, is available from FootHills Publishing. Her out-of-print romance novel, *Passion's Professor*, which she wrote under the pen name "Samantha Rhodes," is now available on her web site. She lives in South Florida where she swims in the warm Atlantic Ocean every chance she gets.

Frederick Langheim, M.D., Ph.D., majored in English and zoology at the University of Wisconsin where he played cello in the symphony, conducted radiological research, and studied bacterial behavior. After graduating, he taught English and German in Florence, Italy, then joined the U.S. National Institutes of Health where he conducted neuroimaging research on schizophrenia, published peer-reviewed papers and poetry, and lectured on the poetry of science. He earned his neuroscience Ph.D. at the University of Minnesota developing novel techniques to identify synchronization of brain activity and also completed his medical degree. He practices psychiatry and is an Assistant Professor at the University of Wisconsin, Madison, where he conducts research into consciousness and sleep with Dr. Giulio Tononi. Frederick and his wife have toddler boy/girl twins. Beyond academics, he competes in triathlons, and continues to write and play cello. His poetry has appeared in *Academic Psychiatry*, *Nature's Echoes* and *The NIH Catalyst*.

Sandra Lindow is semi-retired, and lives on a hilltop in Menomonie, Wisconsin, USA, where she writes, edits and teaches part-time at the University of Wisconsin – Stout. She has six collections of poetry. Her awards include the WRWA Jade Ring for Poetry and the 1990 Posner Award for the best poetry collection by a Wisconsin writer. Her web page is found at www.wfop.org/poets/lindowa.html

Carolyn A. Martin, Ph.D., educator, author, and international keynote speaker, bridges the academic and business worlds. She served as Dean of Student Services at Georgian Court University in NJ, USA; and then as a management trainer for RainmakerThinking, Inc, in New Haven, CT. Co-author of four books on generational diversity, Carolyn has been cited in publications worldwide. Today, she is happily retired and has returned to her first love: poetry. Capitalizing on the leisure to write and join communities of creative people, she is currently president of the board of *VoiceCatcher*, an anthology featuring women authors and artists in the Portland, OR area. Carolyn grabs inspiration for her poems wherever she can find it – from her blue-collar upbringing in New Jersey, to the moles in her backyard in Oregon, to scientific articles that teach her the poetry of the universe. Scientists actually claim the sun rings like a bell!

Neil Harding McAlister, M.D., Ph.D., father of co-editor Zara, envies "Bones" McCoy of *Star Trek*, who could have evaded responsibility for any errors in this book with the excuse, "I'm a doctor, not a publisher!" Neil has no plans to give up his day jobs as a physician specializing in Internal Medicine, and Assoc. Professor of Clinical Sciences at the Northern Ontario School of Medicine. As a wannabe poet, he is grateful to helpful bloggers who disseminate his masterpieces on the Internet from time to time – usually without his knowledge or permission! He has written scientific

articles, non-fiction and humor for professional journals and commercial magazines. His other hobbies are backyard astronomy and music composition. McAlister has published three previous collections of poetry by contemporary authors. Those books and some of his own poems, written in his preferred rhyming, metrical style, are found on the web site, *Travelers Tales*.

Zara McAlister, co-editor of this collection and of an earlier book, *Poems for Big Kids*, graduated in English literature from Queen's University in Kingston, Ontario, Canada. She is now completing her Master of Arts degree in Journalism at the University of Western Ontario. Because Zara has a much broader understanding of literature than her dilettante Old Man does, she is largely responsible for the fact that free verse constitutes the majority of poems in this collection.

Mary Myers is proud to be a fully self-supporting architectural artglass artist. She loves to read about concepts on the frontiers of science, but she can't do the math. This Tucson, Arizona resident penned a column about ecology and country life in a local paper for years. Now she writes poetry, collects old postcards, and tends to her small corner of the Sonoran Desert in both physical and metaphysical ways.

Allene Nichols writes: I'm a doctoral student in humanities at the University of Texas at Dallas. I love science, especially astrophysics and particle physics. As a former high school teacher, I'm particularly concerned about getting girls excited about science. My short play *Hedy Lamar Syndrome* features an elderly female ex-astronaut preparing to retire to a different plane and a sixteen-year-old girl torn between her love of calculus and her desire to be attractive to boys. My poems have recently been published in *Naugatuck River Review*, *Hinchas do Poesia*, and *New Plains Review*.

Gary S. Norton graduated from Lansing Community College with an A.S. in Civil Engineering, Duquesne University with a B.S. in Secondary Education (Physics and Chemistry accreditation), and Michigan State University with a M.A. in Educational Systems Development. He taught physics and chemistry at the Lummi Indian College in Bellingham, WA, and Piedmont College, Demorest, GA. He enjoys physics, pistol competition, sailboat racing, and writing. Gary won the Vanguard BBS Poetry Competition many years ago.

David L. O'Neal, a graduate of Princeton University, former U.S. Marine Corps officer, and retired rare book dealer, is now enjoying a second career as a writer, mostly of poetry. In addition to previous writing about rare books and book collecting, his more recent creative work has been published in various literary magazines and anthologies. O'Neal's manuscript *San Francisco Poems* is in progress, and he has just published *Babbling Birds: An Anthology of Poems About Parrots, From Antiquity to the Present* which is the only book of its kind. His hobbies include sailing, squash, and parrots; and his website is davidloneal.us.

Peter Payack is a widely published poet with multiple appearances in *The Paris Review*, *Rolling Stone*, *The New York Times*, *The Cornell Review*, *Asimov's Science Fiction* and many other publications. His poem, *The Migration of Darkness*, won the 1980 Rhysling Award for best science fiction poetry. Payack was the First Poet Populist of Cambridge Mass. USA (2007-2009.) He invented the Stonehenge Watch™, and infinitesimal replica of the megaliths at Stonehenge inside an old-fashioned pocket watch, which can be used as a shadow clock to tell the time, a device featured on BBC-TV and in *Astronomy* magazine. He has been anthologized extensively; and has published 6 books, the latest, *Blanket Knowledge* (Zoland Books.) Peter is Assistant Professor and

teaches Communications at the Berklee College of Music, University of Massachusetts Lowell. He coaches the Cambridge Rindge and Latin School wrestling team and has run 23 marathons, including 12 Boston Marathons.

Andrea Potos is a poet, editor and bookseller living in Madison, Wisconsin, USA. She is the author of three poetry collections, including *Yaya's Cloth* (Iris Press) and *Abundance to Share With the Birds* (Finishing Line Press). Another full-length collection - *We Lit the Lamps Ourselves* was published by Salmon Poetry in Ireland. Andrea received the James Hearst Poetry Prize from *North American Review*, and her book *Yaya's Cloth* won an Outstanding Achievement Award in Poetry from the Wisconsin Library Association. Her poems appear widely in journals both online and in print.

Marc Prud'homme is a Canadian who has lived in Ontario for twenty years and currently studies Economics. He is interested in science fiction, history, and where they meet in modern society.

Susan Read woke up at the bottom of the ocean, just off the coast of Cape Breton, Nova Scotia, where Kluskap lays his head at night. She received a Masters' degree in English from Ryerson University before moving home from the big city to work at a local cafe. At this rate, she ought to be in high school by the time she's 30. Well, she isn't 30 yet. That's something. Susan's first book is currently working on her.

Jonathan Reisman, M.D., is a doctor, musician, gardener and poet who studied math and philosophy as a college student. He then went on to conduct social research in the former Soviet Union, including a stint living among and studying the native peoples of Far Eastern Siberia. He then attended medical school, and is now a resident in

Internal Medicine and Pediatrics in Boston, MA, USA.

Yvette A. Schnoeker-Shorb's poetry has appeared in *The Blueline Anthology* (Syracuse University Press), *Terrain.org: A Journal of the Built and Natural Environments*, *Wilderness House Literary Review*, *Language and Culture.net*, *Midwest Quarterly*, *Weber Studies*, *Concho River Review*, and many other journals. She holds an interdisciplinary M.A. in Ecosemantics and is co-founder of Native West Press, a nonprofit organization, where she currently serves as senior editor. In addition to poetry and linguistics, her interests include the phenomenon of biophilia related to sustainable practices within the natural world, and she is engaged in a social research project which focuses on specific dimensions of the innate human propensity to affiliate with aspects of nature. She wrote the poem included in this collection after noticing limited, global media attention in response to the detaching of a large ice shelf in Antarctica - an occurrence with profound implications related to global climate change.

Steven K. Smith is a writer, musician, photographer, and an engineer to pay the bills. A survivor of Ohio State University in the late seventies and early eighties, he has more recently studied writing with Ann Townsend, David Baker, Roy Bently, and the Salon writer's collective through Pudding House Press. He has been writing for more than ten years, and currently lives in central Ohio, USA.

Josephine Stone is the mother of four, grandmother of six, retired school teacher after 30 years, classical musician, artist, published poet, author and illustrator of nine children's Books to be published on CD/DVD with a percentage of the proceeds donated to Stephen Lewis Foundation (Grandmothers to Grandmothers.) She is a member of the Canadian Federation of

Poets and the League of Canadian Poets.

Eddie Swayze is a poet, performing artist, actor, visual artist, electronic music composer and educator. He discovered ASL poetry during the 80's. He experiments his ASL poetry along his original composed electronic music and video. He graduated with a Master of Fine Arts degree from Rochester Institute of Technology. Eddie works with deaf/hard of hearing clients at DePaul (mental health program) and Center for Disability Rights, an advocacy and service organization for people with disabilities. His poetry was published in The HandType Press, The Gallaudet University Press, The Clevis Press, The Tactile Mind Press, Dark Lady Press, *The Talon Magazine*, *Forge*, and a few more. He won two awards in ImageArt poetry reading under the annual glbt ImageOut Film Festival. His poetry performance is featured in a short clip in *The Heart of The Hydrogen Jukebox* by Miriam Lerner. He received two New York State Council on the Arts grants and four Strategic Opportunity Stipends grants.

Emily Kagan Trenchard began writing poetry while at the University of California, Berkeley, where her work was commissioned for an address to the graduating class of 2004. Her work has appeared or is forthcoming in publications such as *Ragazine*, *Get Underground*, *The Shiny Gun*, *JMWW*, *The Nervous Breakdown* and *Word Riot*. She also received honorable mention in Rattle's 2009 Poetry Prize. Emily has been a featured writer and performer at numerous reading series and universities across the country, and was a part of Def Poetry Jam's seasons 3 and 4. Though poetry is a large part of her creative life, she has a Master's degree in Science Writing from MIT and makes her living in multi-media science communications, helping the public become fascinated by everything from cholesterol to cosmology. Emily lives in

Brooklyn, USA, where she is a co-curator of the renowned louderARTS Project Reading Series.

Renée von Paschen is a professional literary translator and poet who has taught translation of poetry in university seminars. Born in Canada, she's presently completing her doctorate at the University of Vienna in Austria. Her poetry translations, comprising many noteworthy authors, have been published in Germany, Austria, the USA and Canada. A bilingual collection of Renée's own poems entitled *Snapshots* has recently appeared in *Metamorphoses* in the USA, and her work has also been published in journals, such as *Mobius*, *Ellipse* and *Inscribed*, in English as well as French and German. Several anthologies are in print. Renée regularly gives poetry readings in Austria, Canada and the USA. Her website is: www.art-translation.net

Christine Valentine married and settled in Montana, after coming to this country from England in 1964. She worked as a chemical dependency counsellor for the Northern Cheyenne Tribe, until she retired. Her work is included in many anthologies including: *Voicings From the High Country*; *Emerging Voices*; *Hard Ground: Writing the Rockies III & IV*, *Foreign Ground: Traveler's Tales*; *Blessed Pests of the Beloved West*; *Crazy Woman Creek: Women Rewrite the American West*; *The Meridian Anthology of Contemporary Poetry*.

BJ Ward's most recent book is *Gravedigger's Birthday* (North Atlantic Books/Random House). His poems have been featured on the website *Poetry Daily* and National Public Radio's "The Writer's Almanac", as well as in publications such as *Poetry*, *Green Mountains Review*, *TriQuarterly*, *5 AM*, *The Literary Review*, *Painted Bride Quarterly*, *Puerto Del Sol*, *Mid-American Review*, *The Sun*, and a host of other journals. His essays have appeared in

The New York Times, *The Worcester Review*, and *Teaching Artist Journal*, as well as on the American Library Association's main library advocacy web site (www.ilovelibraries.org) during National Library Week. He is the recipient of a Pushcart Prize and two Distinguished Artist Fellowships from the New Jersey State Council on the Arts. He works as an Associate Professor of English at Warren County Community College in the United States.

Lew Watts, Ph.D., is originally from Wales and moved recently to the US after many years living in Europe, The Middle East and Africa. He divides his time between Santa Fe and Chicago as an independent energy consultant. His poetry has been published extensively in magazines and anthologies in Europe, and his first US work appeared in 2010 in a number of journals including *14by14*, *Autumn Sky*, *Chanterelle's Notebook*, *Decanto*, *New Mexico Poetry Review*, *Ribbons* and *Umbrella*. His first collection, *Lessons for Tangueros*, came out in early 2011. He is a board member of *Modern Haiku* and has a Ph.D. in geology from the University of Reading, UK.

Suellen Wedmore: Poet Laureate *emerita* for the small seaside town of Rockport, Massachusetts, USA, she has been widely published. She was awarded first place in the Writer's Digest Rhyming Poem contest and her chapbook *Deployed* was first place winner in the Grayson Books annual contest. Recently her chapbook *On Marriage and Other Parallel Universes* was published and released by Finishing Line Press.

Harvey Whitney is a Ph.D. candidate at Florida State University where he specializes in the history of science (natural history, history of biology, and the history of physics), American and European intellectual history, and the history of science. He teaches US history at Tallahassee Community College and

has written in publications such as *Left Curve* and *Dissident Voice*.

Laura Madeline Wiseman, Ph.D. has a doctorate from the University of Nebraska - Lincoln, where she teaches English. She is the author of *Sprung*, a full-length collection of poetry forthcoming from San Francisco Bay Press, and three chapbooks, *My Imaginary* (Dancing Girl Press, 2010), *Ghost Girl* (Pudding House, 2010), and *Branding Girls* (Finishing Line Press, 2011). Her work has appeared in *Prairie Schooner*, *Margie*, *Arts & Letters*, *Blackbird*, *13th Moon*, *American Short Fiction*, *Poet Lore*, *The Fence*, *The Los Angeles Review*, and elsewhere. She has received an Academy of American Poets Award, six Pushcart Prize nominations, the Mari Sandoz Award, the Susan Atefat Peckham, the Stuff Fellowship, and Grants from the Center for Great Plains Studies and the Kimmel Harding Nelson Center.

Chad Woody says that he works and lives in Springfield, Missouri, USA with his wife, Heather Johansen. Current projects include *Junk Apocrypha*, a book of selected woodcuts, engravings, and etchings, and an illustrated children's collection called *Uncle Knuckle's Preposterous Narrations*. More data about his foolish existence can be gleaned from cranialstomp.blogspot.com

Credits

The authors of the following poems provide these acknowledgments of previous publication:

- p. 14 Time Dilation in an Intertial Time Frame (*NIH Catalyst*, May/June 1998)
- p. 16 Excursion (Carolyn A. Martin. *Finding Compass*. Portland, OR: Queen of Wands Press, 2011)
- p. 16 Magnetism (*BackPorch*, 1999)
- p. 19 Nature's Numbers (*Inspirit*)
- p. 24 The Bleeping Cosmic Sandwich (1. *Poetic Genius Society*, <poeticgenius.com>
2. *Telicom* Quarterly of The Society for Philosophical Enquiry, <thethousand.org>)
- p. 27 Upon Learning That Hearts Can Become Stones (Ward, BJ. *Gravedigger's Birthday*. North Atlantic Books, 2002)
- p. 32 Science (Bryant, C. *Contains Strong Language and Scenes of a Sexual Nature*. Puppywolf, 2010)
- p. 35 Hematopoesia (*NIH Catalyst*, May/June 1998)
- p. 36 The Changing Medical Profession (*Lunch at the Live Bait Diner*, 2011)
- p. 42 Human Potential (*Asimov's Science Fiction*, June 2010)
- p. 50 An Accounting (*Wisconsin Academy of Arts and Sciences Conf. Proceedings*, 1996)
- p. 52 Txt Msg Hmlet (*Poemeleon*, 2009)
- p. 62 Treadmill (Ens, A.G., *I Am the Poem*. Ensa Publishing, 2005)
- p. 63 Sounds of Writing (*Lunch at the Live Bait Diner*, 2011)
- p. 65 White Noise (*Chronogram*, February 2005)
- p. 72 Biology Student (1. First appeared in *River Oak Review*. 2. Lucille Lang Day. *Wild One: Poems*. Scarlet Tanager Books, 2000)
- p. 73 Frisbee (Hostovsky, P. *A Little in Love a Lot, Poems by Paul Hostovsky*. Main Street Rag, 2011.)

- p. 73 Coping with the Greenhouse Effect (version in *Exact Change*, Vol. 2, Issue One, 2010)
- p. 82 Prozac Ocean (*CaKe: The Literary Journal of Florida A&M University*, 2011)
- p. 84 Seismology Report (version in *Guerrilla Pamphlets* No. 9, March 2011)
- p. 90 tsunami - three tanka (slightly different form in *High Plains Register* 2010)
- p. 93 No Ordinary Matter (*Neovictorian Cochlea*, July 2006)
- p. 97 Solar Symphony (*Best of 2008 Annual Ohio Poetry Day Contest Awards*)
- p. 101 Fate of the Universe (Day, L.L.. *Infinites: Poems*. Cedar Hill Publications, 2002)
- p. 102 einstein's compass (*Types and Shadows, The Journal of the Fellowship of Quakers in the Arts*, 47, winter 2010-2011)
- p. 108 Quasar (*Star*Line*, Sept/Dec 2010)
- p. 109 Sunbathing (*Palehouse*, April 2010)
- p. 110 Infinites (Day, L.L.. *Infinites: Poems*. Cedar Hill Publications, 2002)
- p. 111 in the void (version in *The Fib Review* No. 9, April 2011)

ISBN 978-0-9737006-3-3



9 780973 700633 >