



## Volume 1



## Curator's Notes

*by Aileen Penner*

In the past ten years of my environmental communications and poetic work, I have observed a profound disconnect in people from the world around them and a pervasive separateness and isolation between the art and science communities. I see that people have never been more separate from where their food comes from, their emotions, their families or their communities, including the natural world. In July 2012, Canadian scientists marched on Ottawa to protest government funding cuts and muzzling of evidence-based research, accusing the government of drawing an “iron curtain between science and society.” Never has there been a more urgent time to reconnect art, science and society.

Because of this profound trend, my future work is to bring artists, poets and scientists together starting with the first curation of Volume 1 - The Poetry of Science, the Science of Poetry in Vancouver, B.C.

There are movements that address this separateness such as the U.S. STEM to STEAM campaign championed by the Rhode Island School of Design. Innovation is bound up with Science, Technology, Engineering, and Math – the STEM subjects. Their work shows that creativity is critical for a healthy innovative economy, culture and society. In the U.S. and internationally, art-science collaborations are gaining momentum and proving the economic and social benefits of innovative cross-disciplinary collaboration.

Through the fusing of science and poetry, I asked what new ways of understanding and seeing does the scientist engage in? What new ways of seeing does the poet engage in? For the collaboration to work it needs to be beneficial to both fields. In the first day of our workshop together, many scientists and poets gave examples of



their broken hearts from having to choose one field of study over the other. This fusing of worlds (science and poetry) through collaboration has turned out to be a reunion of the heart.

The poems in this book are all experiments. In some cases, this is the first poem that participants have written since grade school. A few poets visited labs where the tools and methods were scalpels and mice or cells and pond scum. In other cases, poets and scientists had conversations in order to get inside the other's head. The questions and approaches may be different, but the one thing we all have in common is a curiosity and a wonder about the world and the way it works and a desire to change things for the better.

Bringing poets and scientists together has the potential to open up new ways of seeing, experiencing and interpreting the world around us that is beneficial to both fields. I believe this has happened over the five weeks of collaboration. This curation is a culmination of practices and methods that provided the participants with tools and a path to generate new knowledge. It also involved producing and presenting the work beyond the traditional "poetry reading".

I invite you to join this growing movement of reconnecting art and science, whether you are part of the audience or a participant. Future collaborations will look at ways of shifting cultural thinking in order to conserve ecosystems, save habitat, rethink how waste is used, or examine how we address the impacts of climate change.

*Meg Torwl*

## **enviro – mental**

when you took my cells  
for science

no-one asked me  
about the phosphorous  
falling like snow

from the airplanes

over the farmland  
i grew up on

no-one asked me  
about the highway  
i lived next to  
the sound of trucks  
gearing down  
in the middle of the night

80% of people  
with cancer  
have no known  
genetic inheritance

chemicals, viruses  
mutate  
our DNA  
before we are born  
while we sleep, eat, play  
love

i wonder

why 90% of the money  
is spent on 20% of the cause  
the scientific basis of that?

why our government  
just fired  
all the environmental scientists?

grass hopper  
do you hear  
the *silent*  
*spring*? \*

you did want to know  
if i ate pickles  
or bar-b-q'd food

as a token of your  
appreciation for my DNA  
and answering 59 questions

i got  
a herbal tea bag  
unbleached mesh  
organic leaves

my flavor was  
*strawberry vanilla fool.*

*\* Rachel Carson's 1962 book Silent Spring documenting the detrimental effects of pesticides on the environment, particularly on birds. A scientist who lived with cancer.*

*Adrienne Drobnies*

## **Day in the lab, night in the cemetery**

Bright bubbling cells  
everyone hopes to kill

The poor products of the body  
go crazy  
anti-apoptosing  
like the pure products of America  
Dr. Williams knew

Chemotherapy  
like hammering a nail  
into a board  
over and over again

until it can go no further

Running Rituximab  
through the convulsing body  
Anything ending in ab  
will cost you much more  
than you want to pay

*There's nothing more we can do now*

I work in hell  
the burning brightness of hell  
the dark light of hell  
where sequencing slides skim along  
beneath the laser scan

Illumina named for  
4 bands of scintillating lights  
that pour out in terabytes  
from well upon well  
but no one gets to the bottom of them



Still searching  
for the transcription factor grail  
in the structure of the genome but  
no one is cured  
in this 4-colour map  
not yet solved

The *wild type*  
The unchanged one

The *mutant*  
what survives

A change in order  
and lung cancer thrives  
My father turns to  
ash in the ocean  
born and dying in the serous sea  
filmed with chlorinated effluents

For the longest time  
my body would not create  
not a baby  
not a poem  
And then it did  
And now I wonder  
what wild  
and unregulated creativity  
will finally kill me

Notes on terms used in the poem:

*Apoptosis* – programmed cell death

*Rituximab* – an antibody-based drug therapy for lymphoma and  
other diseases

*Illumina* – a brand of DNA sequencer

*Kelty Miyoshi McKinnon*

## **Sugar**

### **1.1 Beta vulgaris**

This corrugation  
of furrows,  
its litany of parallel pacings  
Replicated.

The manic motions inscribed in the contract  
Incessant. Compulsive.

Dust  
in plumes tracing these actions  
like car exhaust.

Denied the sugar for her tea  
all she wanted was one cube  
to counter the bitterness  
of trading berry for beet  
salal for wheat

of topping  
hoeing  
bending  
breaking

to hail bumper crops in '45

Secondary citizen  
not alpha,  
quite ordinary -  
common product of the masses.

### **2.1 Refinement**

The FDA requires  
98.8%.

Whether cane or beet  
from Fiji, Peru  
or Alberta

Purity is paramount.

At the intersection  
of Powell and Rogers  
(Asia to the west, prairies to the east)  
An elaborate apparatus  
of refinement

alchemies of albumen  
hot bone and boiling blood  
diatoms

to take the yellow out

The resulting crystal,  
thin  
persistent  
singular.  
Just carbon hydrogen oxygen.  
A solitary molecule  
with nothing to hide.

Particles without history

Deterritorialized,  
demoralized,  
barely tangible.

To clarify,  
the residual.  
A taste that lingers  
unfinished in the mouth.

### **3.1 Rhizomania**

And we, the next generation

Soilborne  
to a smooth space  
with no organizing memory  
or central automation.

In the list of beet diseases-  
bacterial blight to soft rot-  
is Rhizomania  
(Polymyxa betae)

First a yellowing-  
mild or mosaicked-  
a suppression of production.  
Chlorotic veins assign  
irrational rooting.  
Excessive and useless.

A taxonomy of systems  
A knotting together  
(Not a synthesis)  
Alliteration  
And delirious bifurcation

A folding back upon oneself.



Notes

\* The phrase "A taste that lingers unfinished in the mouth" is borrowed from Baco Obama's 2002 Richmond Art Gallery exhibition 'MIYOSHI: A Taste that Lingers Unfinished in the Mouth'.

*Jonina Kirton*

## **every plant has a song\***

“...all inanimate entities have spirit and personality  
so that mountains, rivers, waterfalls, even continents  
and earth itself have intelligence, knowledge, and the  
ability to communicate ideas.” Vine DeLoria Jr, *God is Red*

in offices creating drawings      too few landscape  
architects have a natural affection for plants  
while the plants never think of themselves  
as extensions of houses or buildings  
complementary experiences      meant to pay  
homage to architectural structures  
    designers and clients participate  
in the illusion of control      but some do want to know  
how things feel underfoot      that when allowed  
a chance to respond      plants themselves can create  
gardens      that time is the ultimate master

set adrift in suburbia      through mists  
under cloudy skies      soft pinks glow  
chartreuses fluoresce      ambers warm      whites glisten  
lithe bunchgrasses wend their way down the path  
a silent backdrop      an organizing spine  
    that anchors

the architect must orient the plant  
explore regionally      then suddenly a rogue tree  
windswept      echoes the wild  
shows off its special qualities  
    as light defines textures  
fluid associations      shifting contexts  
a conceptual frenzy      brings outcomes  
loops of public engagement  
a coalition of hard and soft elements  
a shallow slope      tender trunks  
to soften the effects of cement structures

a collection of narratives          ancient ravine systems  
the complexities of succession    and  
interdependence  
somber summer shadows  
        an altered sense of place  
blessed with cool nights  
        an impromptu touch  
the mysterious scent of unseen flowers  
accesses deep memories  
weathered stones at water's edge  
        an intimate respite  
a seamless composition    that brings  
acoustic interest    the cascading waterfall  
        a grand gesture  
while arching oak branches encourage  
        lingering  
a narrow path invites a solitary adventure  
leaving ample room for emergence

paths evolve    offer a place among plants  
a rhythm that the eye can follow  
the forest floor breathes death decay    birth  
some gardens are blessed          plants seed  
        and distribute themselves  
untamed replication    wildflower meadows  
        stone pots  
not repeating lines of matching trees and shrubs  
in some gardens plants have been allowed  
        to have their own way  
bold flowers mingle    grow next to the street  
make a brief dependable appearance, year after year

\* ***every plant has a song*** is taken from "Relatives with Roots "  
by Leah Marie Doran

Many words and phrases taken from "Grounded: The Work of  
Phillips Farevaag Smullenberg" edited by Keltie McKinnon and "Plant  
– Driven Design: Creating Gardens that Honour Plants, Place and  
Spirit" by Scott Ogden and Lauren Springer Ogden.

*Olive Dempsey*

## **All Stories**

We begin,  
all stories,  
as water and darkness.\*

You look more surfer  
than scientist.  
And I wonder how you stuff all that blonde hair  
into lab-mandated  
protection gear.

And.

What you dream of.  
When the mice fall  
still. Under your hands and the lights are agitated  
flies. Witness,

somewhere  
in fields  
of corn and rice and tomatoes  
is a healing

you unleash  
into the night.

*\* from: "The Story of Corn and Medicine"*

<http://www.gly.uga.edu/railsback/CS/CSCorn&Medicine.html>

*Pam Lincez*

## **Frustration**

Shaking hands anxious thoughts haunt you  
Tell you  
Break free  
Your heart beats for escape  
Responsibility a burden  
Rationality has captured your strength  
And though you suppress innate anguish *This is Wrong*  
Your brain calculates to keep on  
Academic Road  
Where the Doctorate of Philosophy  
Equals  
Transitions to Post-Doctorate-Professorship

Math askew  
Your mind fights the truth  
You are a machine, incapable of emotion, desire  
Secure, this academic path lacks authenticity  
No longer a facilitator of discovery  
You, the machine, immune to heart  
Ache  
Your mission get the job done  
Accumulate data, publish papers, get awarded  
scholarships  
You did not agree to this academia

You had dreams of synthetic biology  
Engineering plants that produced medicine,  
Beautiful Molecular Farming  
Where bananas, potatoes, tomatoes and rice could  
deliver vaccines and antibiotics  
Plants that people in all parts of the world could grow  
To heal themselves  
To share the human right of medicinal care  
You aspired to contribute something beneficial to all life



on this planet  
And yet  
You sit  
Under fluorescent lights  
In a pressurized lab  
A dungeon  
Inside the animal care unit

Researching a cure for a disease  
And though you collect data, publish papers, get  
scholarships,  
You do not  
Contribute to life science, rather  
Take life with science.

Leanne Dunic

## Hunter, Gather

mates descend  
eat dead eyes first  
soft, exposed

from land to labs  
hold faith in the church of reason  
for the sake of humanity

ignore the fan's ominous hum, the ammonia  
odour  
from mice passed

scruff, rub thumb along  
grain of belly

aim for the triangular target  
a squeak to signal  
the arrow has hit  
bevel up

prepare for fixation:  
     splay sacrifice, back against  
 styrofoam board, paper towel lined  
 a bead of urine emerges

check paws  
reflex  
for the sake of humane

remain

lucid  
eloquent, solid

pin apart palms  
fix feet down

gentle snip  
tweeze, clip membranes, ribs

thoracic cavity, deflate  
    observe  
        buck-toothed, dentine gasps

saline  
cleanses  
    next to godliness

organ colour  
escapes  
    as sunset clouds  
advancing on paper

profuse formaldehyde  
set  
transgenic cells  
demystify  
    heart          hype hope

gather ventricles, share one  
tibialus interious  
    waste not, want

need

another heart  
excise four-chambered promises

for the sake

of what muscle memory  
                    remembers

*Ben Paylor*

## **Figurative version of the absolute**

Having her  
Hear  
Unspoken redefinition, beget by observation  
What's that?

What's what  
A need to define

Process  
A vein runs under  
Stubborn

Begs to be found  
Interpretative truth  
Light shed and shadow cast

Twinned tools deftly dance  
Dip, rise, dive  
Spill ink  
The importance of sacrifice  
Search  
Through beautiful fleshy parts

Apical stab subverts sanguine ritual  
A sterile holy cleanse  
Romantic retreat  
Mystic text

Method reflects  
Clockwork pariah  
Cheeks red  
Warm to touch  
Its palette is fixed  
Finding its own heart  
Once  
Beat

*Lynne Quarmby*

## **All seven billion of us are drunk on hearsay\***

Hearsay, you say?  
Here, say, let's do  
an experiment.

Tonight  
I call Bernadette.  
*I'm elderly, dear. And blind.*  
She wants  
to talk about Iceland,  
alternative energy.

I just want her to vote Green in the upcoming by-election.

Hypothesis:

Andy Lewis-Brookes  
internet troll  
might be drunk.

When I got arrested  
coal  
train  
blockade.

Andy wrote:  
*They may have a better chance of being heard  
if they weren't such hypocrites.*

I clenched  
oh shit  
no turning  
train handcuffs jail  
charges civil suits.

Ah. Sorry  
I have my retirement to think about.  
And besides,  
there's China.

Experiment  
not approved  
by the Research Ethics Board.

*\*an updated line from "The Deep Dark" by Martin Balgach*



## Contributors

**Olive Dempsey** is a Vancouver resident, who spends her time as a writer, facilitator, life coach and engagement strategist. Her work is focused on transformation processes within individuals, groups and communities. [olivedempsey.ca](http://olivedempsey.ca)

**Adrienne Drobnie**s is a scientist and a poet. She works at the BC Cancer Agency and is a graduate of the SFU Writer's Studio. Her poetry has appeared in journals in Canada, the US and UK. She was a finalist for the 2009 CBC literary award. [adriennedrobnie.com](http://adriennedrobnie.com)

**Leanne Dunic** is a multi-disciplinary artist from Vancouver who enjoys documentation through pictures and words. Her style is organic and explores the dichotomies of tradition/modernity, nature/technology, masculine/feminine, and east/west. This project was an incredible opportunity to further explore these dimensions. [leannedunic.com](http://leannedunic.com)

**Jonina Kirton** a Métis/Icelandic poet, more mystic than scientist, she has always been intrigued by the many ways that science and the Great Mystery intersect. Her writing has been featured in *Other Tongues: Mixed - Race Women Speak Out*, *Pagan Edge*, *First Nations Drum*, *Toronto Quarterly*, *Quills Canadian Poetry Magazine*, *New Breed Magazine*.

**Pam Lincez** is a 4th year PhD candidate researching the immunological consequences of virus-induced autoimmunity at the UBC. She is a passionate science communicator and writes her own blog "For the Love of Science" at [pjlincez.blogspot.ca](http://pjlincez.blogspot.ca). Running, snowboarding and attending live music shows are her other passions.

**Kelty McKinnon** is a Landscape Architect and Principal at PFS where she specializes in emergent public landscapes that engage cultural, social and environmental ecologies. She is interested in the intersections between science and art and has written on topics ranging from hefted sheep and genetic experimentation to invasive plants and social infrastructure in Chinatown.

**Ben Paylor** is consummate communicator who strives to promote public interest and understanding of science, utilizing a wide variety of mediums, including filmmaking, animation and writing, to facilitate this process. Ben is a 3rd year PhD candidate researching cardiac stem cell biology at the UBC, and a 2012/13 Action Canada fellow.

**Aileen Penner** is a poet, teacher, and professional writer who loves to write about the sea and the natural world. She believes that art-science collaborations produce new ways of seeing and understanding that can only benefit humanity in this time of environmental crisis. [aileenpenner.com](http://aileenpenner.com)

**Lynne Quarmby** studies how cells perceive and respond to their environment. She is a prof at SFU and is hooked on the excitement of discovery. Lynne follows an idea with an experiment and lets the results tell what is next. Her first experiment with poetry revealed some promising preliminary data.

Born of a union between an artist and a scientist, **Carol Shillibeer** believes sci-po is a fertile connection. Two ways of thinking, of hearing the world speak: adenosine tri-phosphate is a fundamental life metaphor. The similarities she sees between sci & po might be a case of convergent evolution, but OK, she can write with that too. Her poetry has appeared in *Room*, *The Malahat Review*, *Ditch* and others.

**Meg Torwl**'s writing has been anthologized in books and periodicals in Canada, USA, the UK, and New Zealand. A graduate of The Writers Studio at SFU, she has worked in performance, radio, photography and film. Her interests include humans as part of nature, psychoneuroimmunology, and the stories in cells. [integralmedia.blogspot.ca](http://integralmedia.blogspot.ca)