

Me, Myself, and I

By Shea Winterberger

Interests

School Work

Experiences

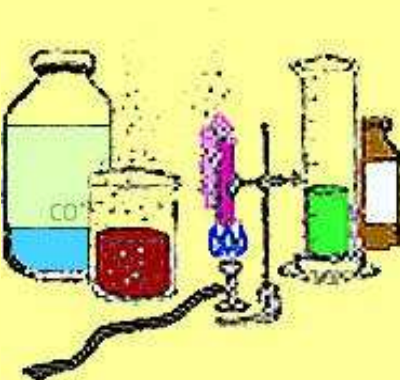
Interests

There are many things I like to do in my spare time. These include logic problems, puzzles (1000+ pieces), photography, hiking, swimming, modern dance, traveling, and learning new things.



School Work

My school work shows that I excel in everything I do and that I understand my subjects. Feel free to click on any of the pictures below to examine sample work from that class.



Music

I play the Trombone. This year (99-00) we worked on scales, clarity of those scales and other music, speed and quality. This sample work is the sheet music of **The John Dunbar Theme** and a 2 min. audio recording of the piece.

[Click Here for Example](#)

From DANCES WITH WOLVES

THE JOHN DUNBAR THEME

TROMBONE
Solo

[Click Here for Audio Recording](#)

By JOHN BARRY
Arranged by MICHAEL SWEENEY

Expressively

4

5

mf

13

21

29

37

45

mf

p

This musical score is for a Trombone Solo of the John Dunbar Theme. It is written in bass clef with a key signature of one flat (B-flat) and a 4/4 time signature. The tempo/style marking is 'Expressively'. The score consists of eight staves of music. Measure numbers 4, 5, 13, 21, 29, 37, and 45 are indicated in boxes above the staves. Dynamics include *mf* (mezzo-forte) and *p* (piano). The piece concludes with a final double bar line and a fermata over the last note.

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Goals

In the future I would like to exercise my knowledge in the Science field as a Marine Biologist. I have I passion for living things in the sea, so I would enjoy an occupation allowing me to do what I love. I believe that my enjoyment of learning may help me with this.

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Social Studies

In social studies this year (99-00) we studied geography, psychology and sociology. In psychology we studied aspects of the brain and different therapies for mania. We all had to study a topic that fit under psychology, and I chose biological therapies. This is my report on that topic.

[Click for Example](#)

Biologically Based Therapies

Shea Winterberger

Treatment in General

Psychological treatment generally means talking therapy. But for some however, talking is not enough. These people are to profoundly depressed, exhibiting symptoms of bipolar disorders or are schizophrenic and need hospitalization because they are suicidal. A 1986 NIMH study shows that only 1 in 5 americans with depression seek professional help, even though treatment can help over 80% of those afflicted. A woman with a psychological disorder writes about biological treatment: **“It may help someone else to know that with my type of illness, given good care, though you may not believe it during your illness, there is an end to the dark tunnel in which you wander lost and alone for so long. There is an end and an opening with a light to guide you back to the world you thought you had left forever. There will be detours, landslides, and lost ground, and you may despair, but there is an end and an out.”** (This is proof of drugs making an impact on the psychological world). Freud predicted over 60 years ago that biology and psychology would meet and they have. But some people are scared of psychiatric care. Biological based therapies involve medication, hospitalization and physicians. The three classes of biological therapies are psychosurgery, ETC., and drugs.

Psychosurgery was used in the past to erase symptoms of a serious disorder this was probably one of the most serious mistakes made in the psychiatric world. Prefrontal Lobotomies were preformed in the 1940s/50s by severing parts of the brain’s frontal lobes which, at the time, were thought to control emotions. Patients would be cured of their disease, but would be overly calm and unemotional. An estimated 1 in 4 would die from the operation. John F. Kennedy’s younger sister, Rosemary, underwent the surgery after several outbursts of violence and being diagnosed with mild retardation.

Despite advances in the technology and precision psychosurgery is still rarely used today because drugs proved more effective, the long term effects of the surgery is questionable, and the fact that the procedure is irreversible.

Electroconvulsive Shock Therapy (ETC.) is used with depressed individuals as treatment for a severe illness. It involves ‘jump starting’ the brain with a small burst of electricity that lasts less than 1 second, which results in a generalized seizure. The patient is treated with 3-12 sessions over many weeks. In the past, it was often used on patients who did not need it (mostly women), or by doctors that wanted to unjustly control their patients. Today, according to the NIH (National Institute of Health) fewer then 2.5% of all the patients in mental asylums are treated with ETC. It is effective only for short term on severely depressed patients or patients who are suffering from severe cases of mania. It is sometimes used on people with dangerously high risk of suicide. It is only effective if it is followed by drugs and psychotherapy. Memory, the ability to learn, and the ability to listen may be hard for the patient for several weeks after this treatment.

Drugs are the most common of the biological treatments. They are helpful to many people in many different ways. All psychological disorders can be repressed by drugs. In this last half of my report I’m going to talk about Antidepressants, Antimania, Antipsychotic drugs, and about testing them on microorganisms.

Testing Drugs on Microorganisms

Testing drugs on humans is inappropriate, but is, after a lot of discussion, inappropriate to test them on animals too. So scientists have resorted to microorganisms to complete the task with. Although microorganisms lack a nervous system, they are still a good choice because they have the same responses to drugs as animals do.

- A good candidate for depressants is Tetrahymena, a microorganism that has one way of moving itself (a single or double tail). It will show its reaction to the drug by slowing down or changing direction.

Antidepressant Drugs

Technically *thymoleptics*, these drugs alter the level of neurotransmitters in the brain, and affect the areas in the brain that produce substances having to do with emotional expression. These drugs must be taken under close medical supervision since serious side effects, such as hypertension, are possible. Antidepressants are used for disorders characterized principally by anxiety. They can block the symptoms of panic, including rapid heartbeat, terror, dizziness, chest pains, nausea, and breathing problems. They can also be used to treat some phobias. There are 2 major categories of antidepressant drugs: Tricyclics and Monoamine oxidase (MAO) inhibitors. The tricyclics are used more often because MAO patients have restricted diets and other constraints to prevent reactions to MAO drugs.

Chart #1

Chemical Group	Generic Name	Trade Name
Tricyclics	Amitriptyline	Elavil
	Imipramine	Tofranil
	Nortriptyline	Pamelor
	Desipramine	Norpramin
	Doxepin	Sinequan
	Clomipramine	Anafranil
MAO	Phenelzine	Nardile
	Tranylcypromine	Parnate

Antimania Drugs

Carbamazepine is most widely used among maniacs. These drugs reduce agitation and the euphoric 'high' characteristic of maniacs. Side effects (although generally mild) include drowsiness, dizziness, confusion, disturbed vision, perceptual distortions, memory impairment, and nausea. These effects usually respond to temporary dosage reduction. Another common but generally mild unfortunate effect is the lowering of white blood cell count which requires periodic blood tests to monitor against the rare possibility of more serious, even life-threatening, bone marrow depression. Rashes can occur in 15 -20% of the patients, and are sometimes serious enough to demand the cease the taking of their medication. These drugs are also less effective on younger patients.

Chart #2

Chemical Group	Generic Name	Trade Name
Lithium Carbonate	Lithium	Eskalith
		Lithonate
		Lithobid
Unknown	Carbamazepine	Tegretol

Antipsychotic Drugs

These drugs are for sufferers of schizophrenia and they reduce aggression, hostility, and violence. A doctor will consider several factors when prescribing an antipsychotic drug, besides how "ill" someone is. These include the patient's age, weight, and type of medication. Past medications are important too. If a person took a particular drug before, and it worked, the doctor is likely to prescribe the same drug again. There are a number of antipsychotic (neuroleptic) drugs available. They all work; the main differences are in the dosage prescribed to produce healing effects. Some people might think that the higher the dose of medication, the more serious the illness, but this is not always true.

Chart #3

Chemical Group	Generic Name	Trade Name
Phenothiazine	Chlorpromazine	Thorazine
	Trifluoperazine	Stelazine
	Fluphenazine	Prolixin
	Thioridazine	Mellaril

Bibliography

Hilgard, Ernest R.; Introduction to Psychology 9th edition; Harcourt Brace Jovanovich Publishers; San Diego; 1987

Goodwin, F.K. and Jamison, K.R.; Maniac-Depressive Illness; Oxford University Press; New York; 1990

Kime, Robert E.; Mental Health; Dushkin Publishing Group, Inc.; Connecticut; 1992

O'Neil, Karen; Health and Medicine Projects for Young Scientists; Franklin Watts Publishers; New York; 1986

Math

In Math II this year (99-00) we worked out of the book Gateways to Geometry and Algebra. We studied venn diagrams, pie graphs, matrix, transformations, substitution, and how to graph things. This is a sample that shows my way of remembering these formulas by way of notes.

[Click for Example](#)

Pie Charts: example

#	%	°
10	20%	72°
15	30%	108°
10	20%	72°
15	30%	108°
# of	total	% of 360

Symbols: \bar{N}

>

not N

greater than

<

less than

\geq

greater than or equal to

\leq

less than or equal to

=

equal to

\neq

not equal to

\emptyset

cannot be

\bullet

could be

\subset

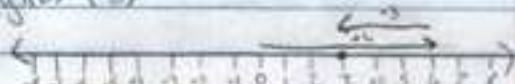
subset of

Number lines:

Coordinates: $x=3$ or

$$x < 5$$

$$\text{Adding: } (6) + (-3)$$



Graph



ordered pair =
 $(3, 4) \rightarrow (x, y)$

Substitution:

$$x + y = 90$$

$$\frac{x}{y} = \frac{2}{3}$$

$$\frac{2x}{3} = \frac{2x}{3}$$

$$x = \frac{2}{3}y$$

$$x + y = 90$$

$$\frac{2}{3}y + y = 90$$

$$\frac{5}{3}y = 90$$

$$\frac{5}{3} \cdot \frac{3}{5}y = 90 \cdot \frac{3}{5}$$

$$y = 54$$

$$x = 36$$

Distributing:

Numbers:

$$5(3x - 5) = 3$$

$$15x - 25 = 3$$

subtracting

negative signs:

$$3x - (x - 10)$$

$$3x + 0(x - 10)$$

$$3x + 1(x - 10)$$

$$3x - 1x + 10$$

$$2x + 10$$

Distance = rate

time

U = union, everything

\cap = intersection, shared elements

German

In German this year (99-00) we studied song, school, tradition and basic life in Germany. This is an example from that class and is the National Anthem of Germany, which we had to memorize and sing for a grade.

[Click for Example](#)

Lied der Deutschen



Ei - nig - keit und Recht und Frei - heit
Da - nach laßt uns al - le stre - ben



für das deut - sche Va - ter - land!
brü - der - lich mit Herz und Hand!



Ei - nig - keit und Recht und Frei - heit



sind des Glück - kes Un - ter - pfland.



Blüh im Glan - ze die - ses Glück - kes,



blü - he, deut - sches Va - ter - land!

The national anthem of the Federal Republic of Germany is the third verse of the "Lied der Deutschen".

The lyrics of the anthem were written by August Heinrich Hoffmann von Fallersleben (1798-1874) and the melody was composed by Joseph Haydn (1732-1809).

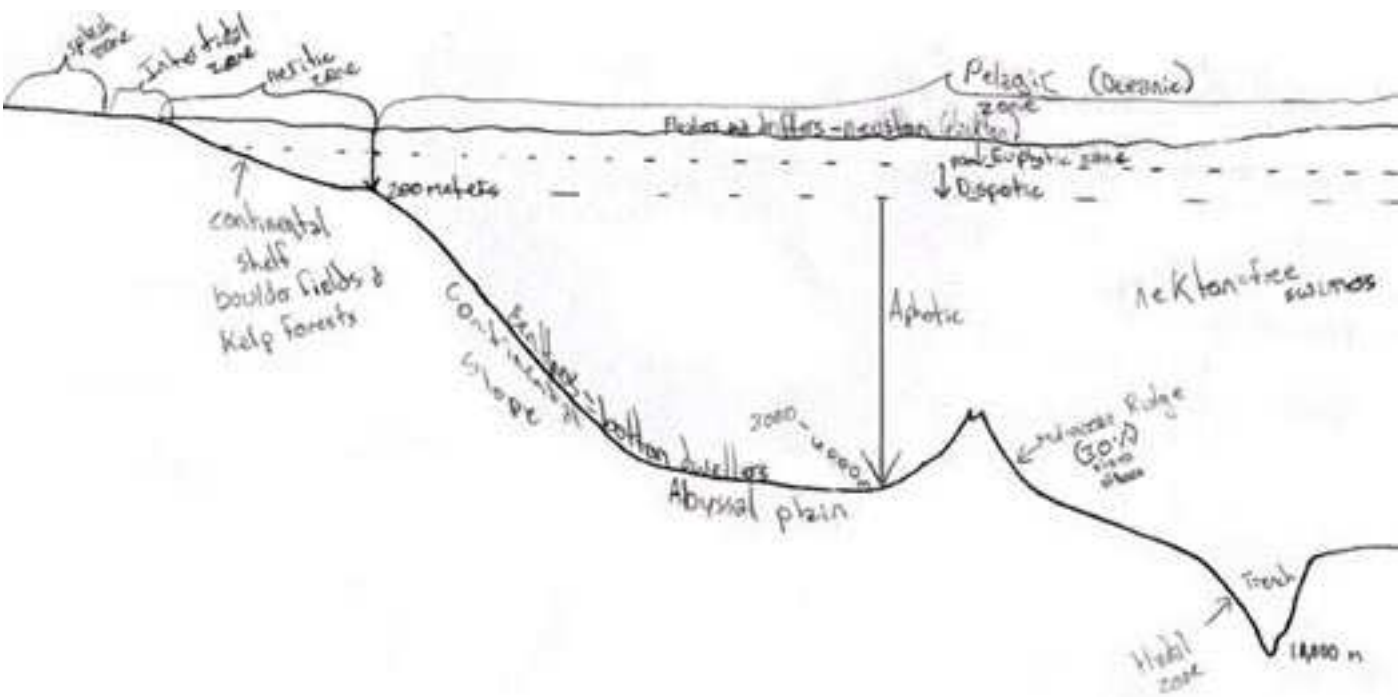
The national holiday is 3 October, the Day of German Unity.



Science

In my Marine Biology class this year (99-00) we studied Plate Tectonics/Geology, Marine Life, Tides and Currents. My sample work here is a 'Classification of the Marine Environment' (basically a map of a section of the sea floor).

[Click for Example](#)



Average ocean depth - 3,700 meters

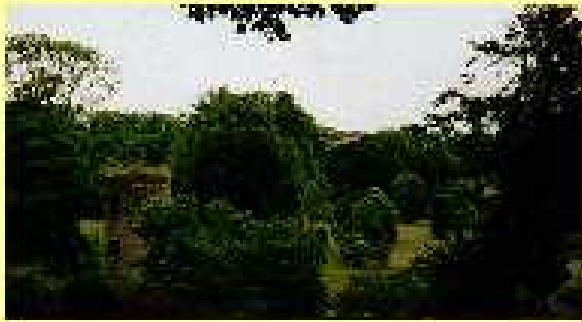
N. hemisphere = 66.6% land

S. hemisphere = 14.1% land

Nekton = free swimmers
 Plankton = plankton
 Benthos = Bottom dwellers

Experiences

As far as traveling goes I would have to say that going to Ireland, Colorado and Hawaii on big tours beats all. These tours were with my grandparents and aunt and I had a marvelous time. In summer 2000 I went to Johns Hopkins University Center for Talented Youth. All of these trips have had a remarkable impact on my life.



[Click on the Garden for Pictures from Ireland](#)



[Click on the Valley for Pictures from Colorado](#)

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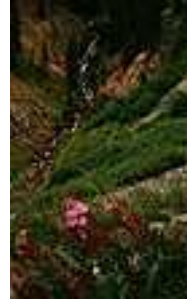
Pictures in Colorado



Anasazi Cliff Dwelling



Anasazi Dwelling



Creek



Elk statue



Royal Gorge Tram



Royal Gorge Bridge



Roadside



Rear view from Train

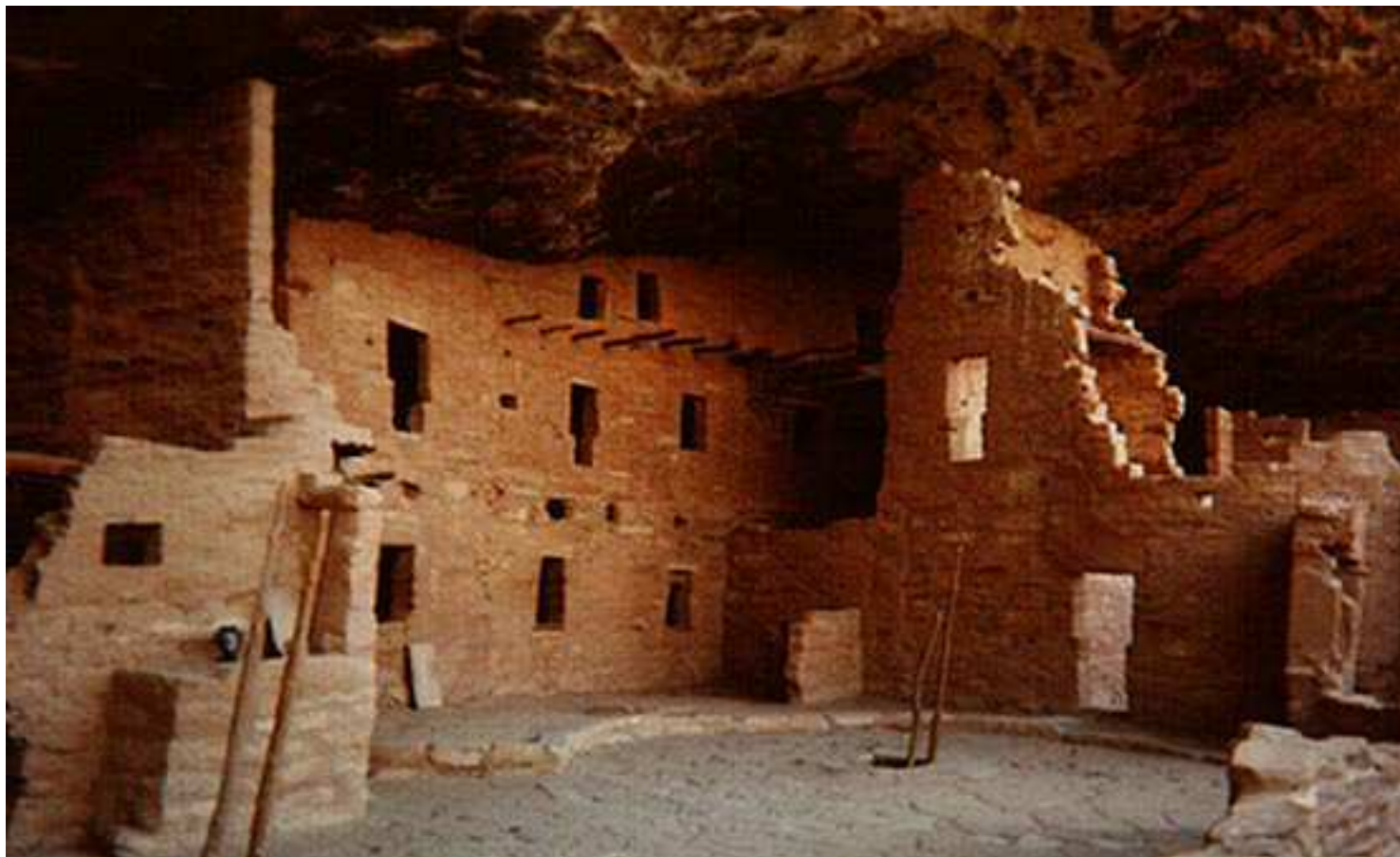


Model Ts



Garden of the Gods





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3/10: Creek

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4/10: Elk statue

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5/10: Royal Gorge Tram

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6/10: Royal Gorge Bridge

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\leq **7/10: Roadside** \leq \geq 

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8/10: Rear view from Train

[<](#)

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9/10: Model Ts

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Pictures in Ireland



Across from Dublin Castle



Blarney Castle



Blarney Tower



Gaelic Sign



Hotel Room



Old Fishing Boat



Presidential Residence



View from Blarney Castle



Woman statue



St. Peter's Church

[<<](#)

1/10: Across from Dublin Castle

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2/10: Blarney Castle

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4/10: Gaelic Sign

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5/10: Hotel Room

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6/10: Old Fishing Boat

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7/10: Presidential Residence

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