

CASPIE RESEARCH FOR HIGH SCHOOL STUDENTS

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UNIVERSITY OF IL AT CHICAGO

SCIENCE INSTRUCTOR - CURIE METROPOLITAN HIGH SCHOOL

CHICAGO PUBLIC SCHOOLS

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Acknowledgements

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Chemistry Division

“Research Experience for Teachers”
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SUMMER RESEARCH

ANTIOXIDANT MODULE

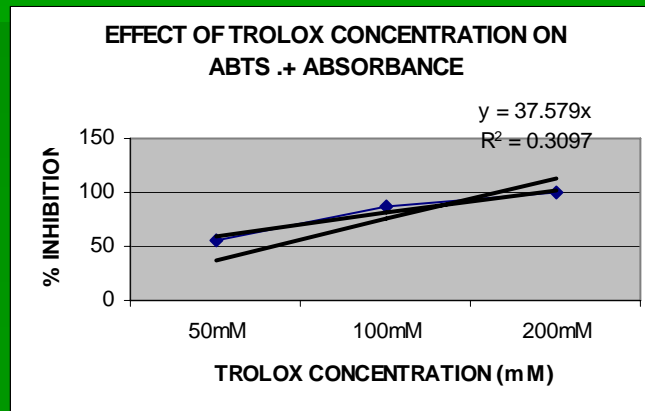
Trolox Equivalent Antioxidant Capacity (TEAC) ASSAY Results Trolox (Flavonoid – Vitamin E)

Trolox Concentrations	ABTS+ Absorbance (735nm)
0mM	.358830
50mM	.15639
100mM	4.9599×10^{-2}
200mM	3.2883×10^{-3}

$$A_{\text{ABTS} + 6\text{min.}} = A_{735}^{\text{Control}} - A_{735}^{\text{Test at T = 6 min.}}$$

$$\% \text{ Inhibition} = (A_{\text{ABTS} + 6\text{min.}} / A_{735}^{\text{Control}}) \times 100$$

[AH] (mM)	$\Delta A_{\text{ABTS} +}$ (mM)	% Inhibition
50mM	.20244	56.4
100mM	.30923	86.2
200mM	.35554	99.1



Trolox Equivalent Antioxidant Capacity (TEAC) ASSAY Results

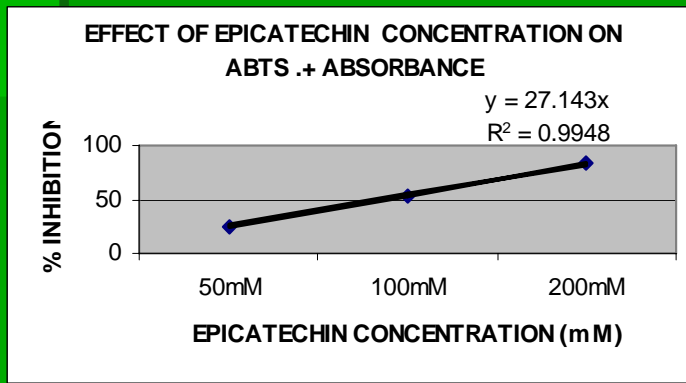
Epicatechin (Flavonoid –Apples & Teas)

Epicatechin Concentrations	ABTS+ Absorbance (735nm)
0mM	0.36174
50mM	0.27002
100mM	0.17093
200mM	6.144×10^{-2}

$$A_{\text{ABTS} + 6\text{min.}} = A_{735}^{\text{Control}} - A_{735}^{\text{Test at T = 6 min.}}$$

$$\% \text{ Inhibition} = (A_{\text{ABTS} + 6\text{min.}} / A_{735}^{\text{Control}}) \times 100$$

[AH] (mM)	$\Delta A_{\text{ABTS} +}$ (mM)	% Inhibition
50mM	.09172	25
100mM	.19081	53
200mM	.30030	83



$$A_{735}^{\text{Control}} = .36174$$

$$\text{TEAC VALUE} = (\text{SLOPE SAMPLE}) / (\text{SLOPE TROLOX})$$

$$\text{TEAC VALUE} = .07227$$

Trolox Equivalent Antioxidant Capacity (TEAC) ASSAY Results

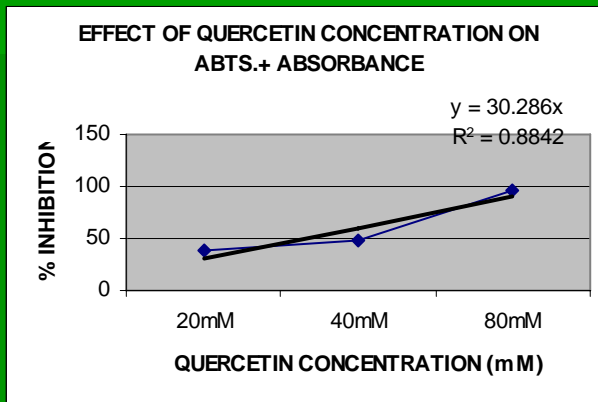
Quercetin (Flavonoid – Fried Onions)

Quercetin Concentrations	ABTS+ Absorbance (735nm)
0mM	.35910
20mM	.22134
40mM	.18302
80mM	1.4366x10 ⁻²

$$A_{\text{ABTS} + 6\text{min.}} = A_{735} \text{Control} - A_{735} \text{Test at T} = 6 \text{ min.}$$

$$\% \text{ Inhibition} = (A_{\text{ABTS} + 6\text{min.}} / A_{735} \text{Control}) \times 100$$

[AH] (mM)	$\Delta A_{\text{ABTS} +}$ (mM)	% Inhibition
20mM	.13776	38
40mM	.17608	49
80mM	.34473	96

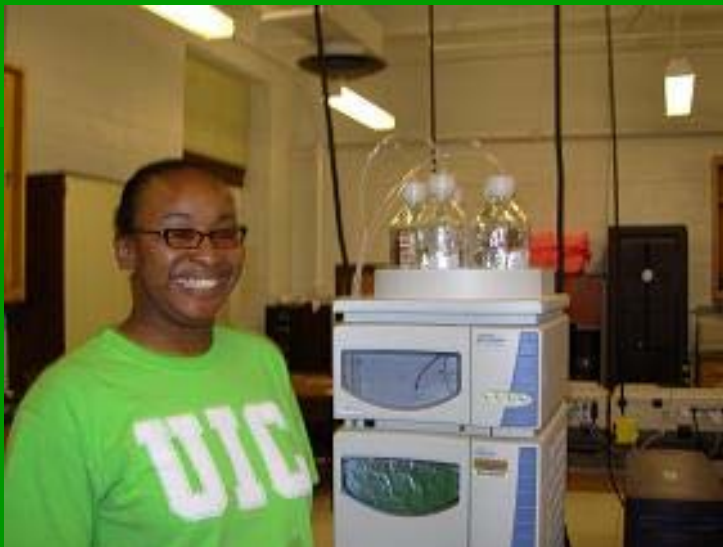


$$A_{735} \text{Control} = .35910$$

$$\text{TEAC VALUE} = (\text{SLOPE SAMPLE}) / (\text{SLOPE TROLOX})$$

$$\text{TEAC VALUE} = .80715$$

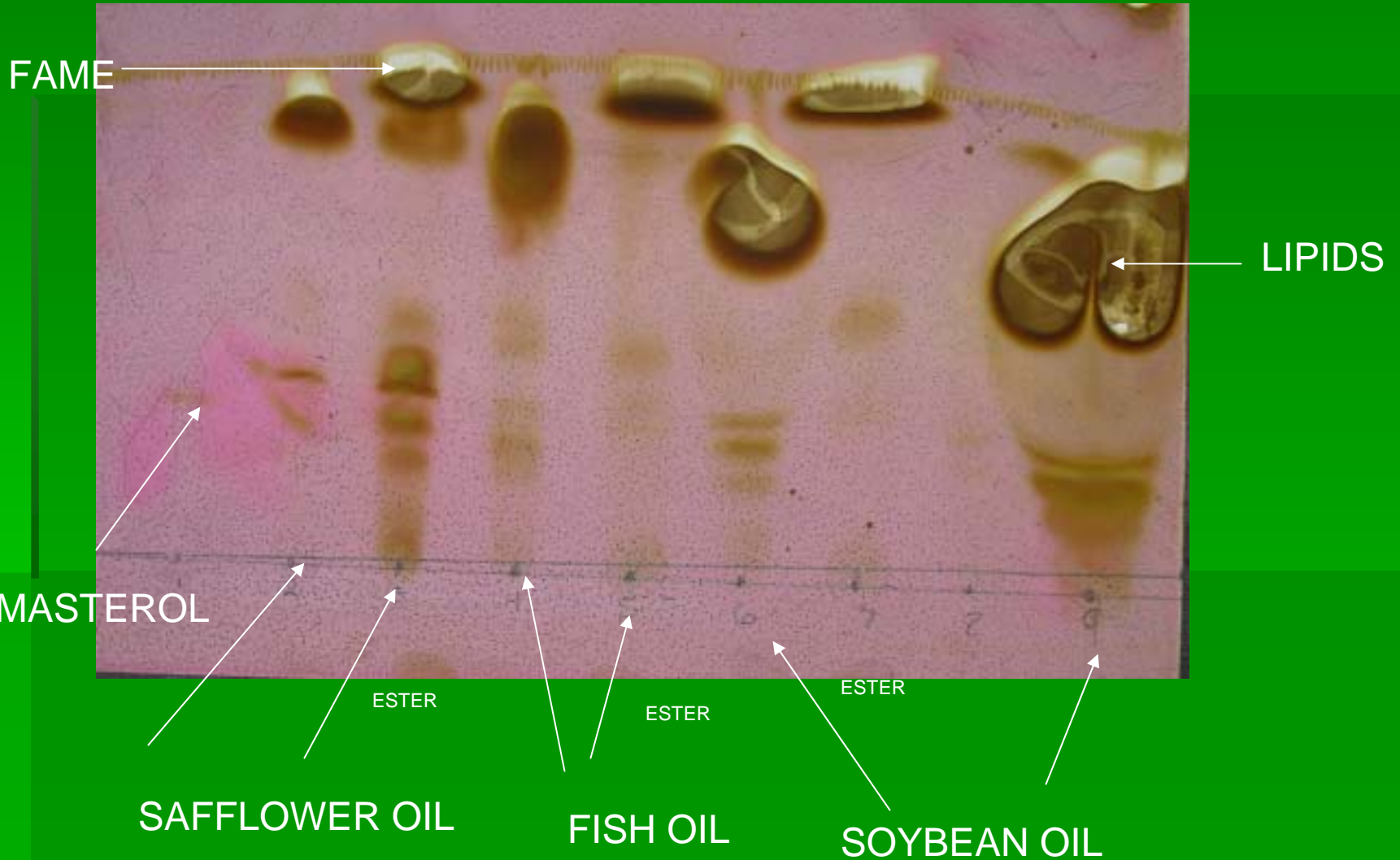
VISIT TO PURDUE FOR High Performance Liquid Chromatography (HPLC)



LIPID MODULE

SEARCH FOR STIGMASTEROL

TLC RESULTS: OILS

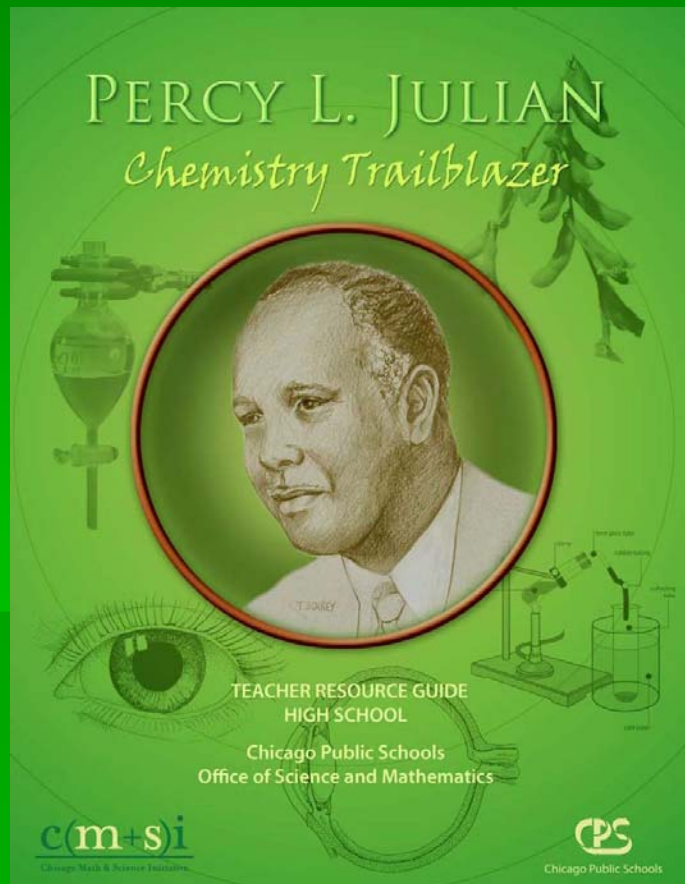


DR. PERCY JULIAN

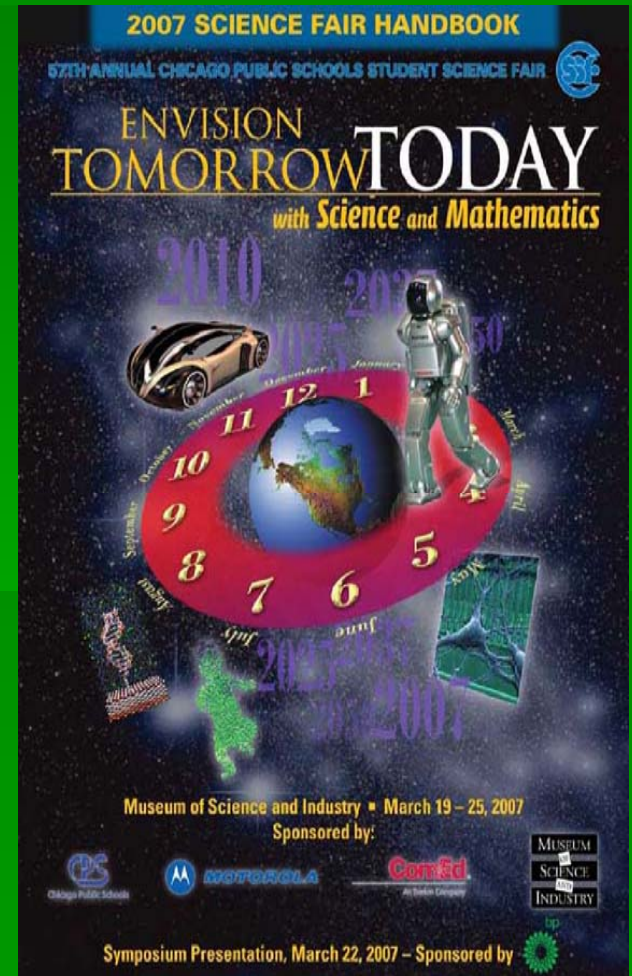
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CHICAGO PUBLIC SCHOOLS

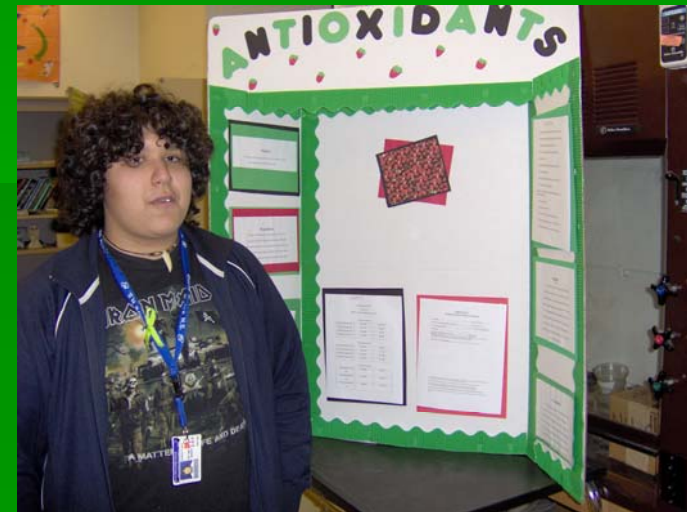
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ANTIOXIDANTS



BAND GAP SYMPOSIUM PAPER



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EXTRACTION OF LIPIDS



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THIN LAYER CHROMATOGRAPHY ANALYSIS



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FOR METHYLATION OF
FAME



TRANS FATS ON WGN MORNING NEWS