CRC Update

Amanda Pruzinsky
STAR Modeling Team

Personal Background

STAR, WG, and Action Team Updates

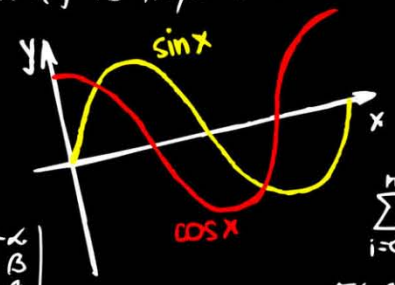
Professional Development

Future Plans and Interests

Washington College ‘12


Environmental
Complex
Studies
Interdisciplinary
Sustainability
Ecosystems
People
Science
Economy
Philosophy
Land
Biology
Climate
Politics
Economics
Relationships
Forests
Chemistry
Society
Wildlife
Agriculture
Community
Food
Physics
Justice
Watershed
Energy
Pollution
Ecology
Policy
Law

$x^3+x^2+y^3+z^3+xyz-6=0$



$grad f = \left(\frac{\partial f}{\partial x}; \frac{\partial f}{\partial y}\right)$

$tgx \cdot ctgx = 1$

$2x^2yy' + y^2 = 2$

$x_1 = -11p, x_2 = -p, x_3 = 7p, p \in \mathbb{R}$

$Y_{i+1} = Y_i + b.k_2$

$B = \begin{pmatrix} 2 & 1 & -1 & 0 \\ 3 & 0 & 1 & 2 \end{pmatrix}$

$a^2 = b^2 + c^2 - 2bc\cos\delta$

$tg\frac{x}{2} = \frac{1-\cos x}{\sin x} = \frac{\sin x}{1+\cos x}$

$\sum_{i=0}^{n} (p_2(x_i) - y_i)^2$

$tg2x = \frac{2tgx}{1-tg^2x}$

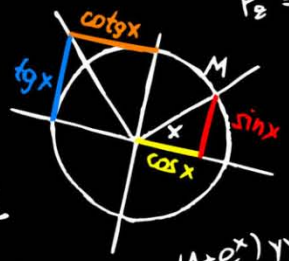
$tgx = \frac{\sin x}{\cos x}$

$X_2 = \begin{pmatrix} -\alpha \\ \beta \\ -\gamma \\ -\delta \end{pmatrix}$

$\iiint_M z\,dx\,dy\,dz = \int_0^{2\pi}\left(\int_0^2\left(\int_{\frac{1}{2}r}^{1} nr\,dr\sigma\right)dn\right)d\varphi$

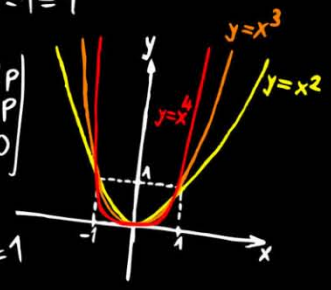
$\lim_{n\to+\infty} \frac{\sqrt{n^3+1}+n}{\sqrt[3]{3n^2+2n-1}}$

$\lambda x - y + z = 1$
$x + \lambda y + z = \lambda$
$x + y + \lambda z = \lambda^2$



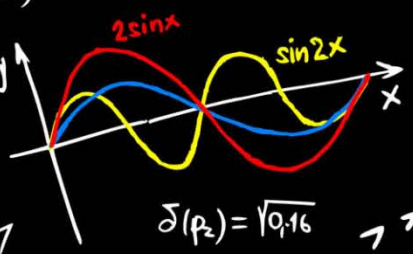
$F_z = 2xyz - 1 = 1$

$X_1 = \begin{pmatrix} 2p \\ -p \\ 0 \end{pmatrix}$



$2arctgx - x = 0, I = (1, 10)$

$\int_{-\pi/2}^{\pi/2} \sin^4x \cdot \cos^3x\,dx$



$\frac{a}{\sin\delta} = \frac{b}{\sin\beta} = \frac{c}{\sin\gamma}$

$y = \sqrt[3]{x+1}\ ;\ x = tgt$

$(1+e^x)yy' = e^x$

$y(1) = 1$

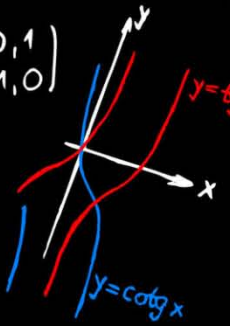
$X_1 = \begin{pmatrix} \alpha+\beta+\gamma \\ \beta^2 \end{pmatrix}$

$\cos2x = \cos^2x - \sin^2x$

$\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1$

$\delta(p_2) = \sqrt{0,16}$

$C = \begin{pmatrix} 0,1 \\ 1,0 \end{pmatrix}$



$\sin^2x + \cos^2x = 1$

$A+B+C = 8$
$-3A-7B+2C = -10,3$
$-18A+6B-3C = 15$

$\frac{\partial z}{\partial x} = 2\ ;\ \frac{\partial z}{\partial y} = 0$

$\vec{n} = (F_x'; F_y'; F_z')$

$a^2 + b^2 = c^2$

$\alpha, \beta, \gamma \in \mathbb{C}$

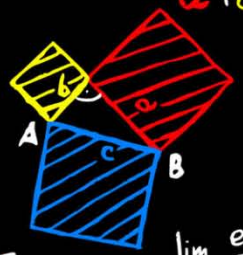
$f(x) = 2^{-x} + 1, \varepsilon = 0.005$

$\lambda_2 = i\sqrt{14}$

$\int R\left(x, \sqrt[n]{\frac{ax+b}{cx+d}}\right)dx$

$\frac{\sin x}{x} \leq \frac{x}{x} = 1$

$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 0$



$\sin2x = 2\sin x \cdot \cos x$

$e^z - xyz = e\ ;\ A[0; e; 1]$

$\frac{2x}{x^2+2y^2} = 2$

$z = \frac{1}{x}\arcsin\frac{\sqrt{2}}{2}$

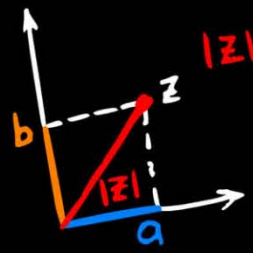
$\eta_1 = \lambda_1^2 - 3\lambda_{+1} + 1 \neq 0$

$\lim_{x\to0} \frac{e^{2x}-1}{5x} = \frac{2}{5}$

$|z| = \sqrt{a^2+b^2}$

$|\alpha| + |\beta| \neq 0\ ;\ \mu \neq 0$

$\sin(x+y) = \sin x\cos y + \cos x\sin y$



$\vartheta\left(\frac{\partial f}{\partial x}\right) = 16 - x^2 + 16y^2 - 4z > 0$

$A = \begin{pmatrix} x; & 1+x^2; & 1 \\ y; & 1+y^2; & 1 \\ z; & 1+z^2; & 1 \end{pmatrix}\ ;\ x=0, y=1, z=2$

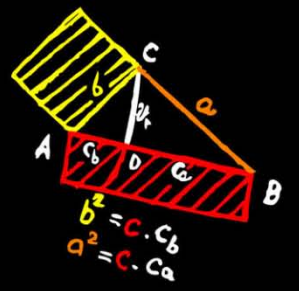
$y' - \frac{\sqrt{y}}{x+2} = 0;\ y(0) = 1$

$\oint 3x^{\frac{7}{4}} + 1,66x^{-0,17}dx$

$\lim_{n\to+\infty}\left(1+\frac{3}{n}\right)^n$

$A = [1; 0; 3]$

$\cos\varphi = \frac{(1;0)\cdot\left(\frac{1}{2\sqrt{3}}; \frac{1}{4\sqrt{3}}\right)}{\sqrt{\frac{1}{12}+\frac{1}{48}}}$



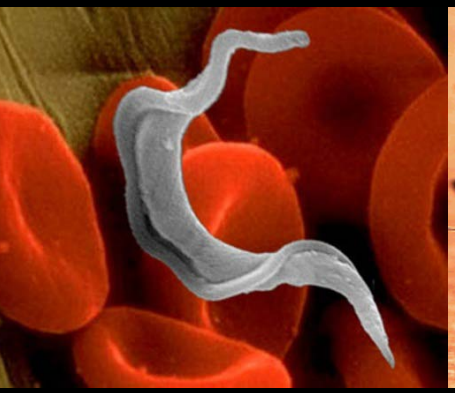
$b^2 = c \cdot c_b$

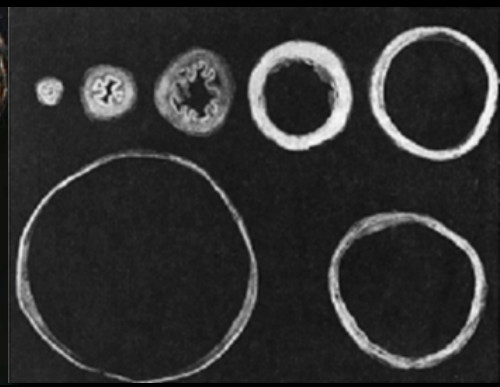
$a^2 = c \cdot c_a$


YOU ARE HERE

Modeling Chagas Disease

REU 2010 – Oakland University



8 - 10 million persons infected

100 million at risk

20,000 people die each year

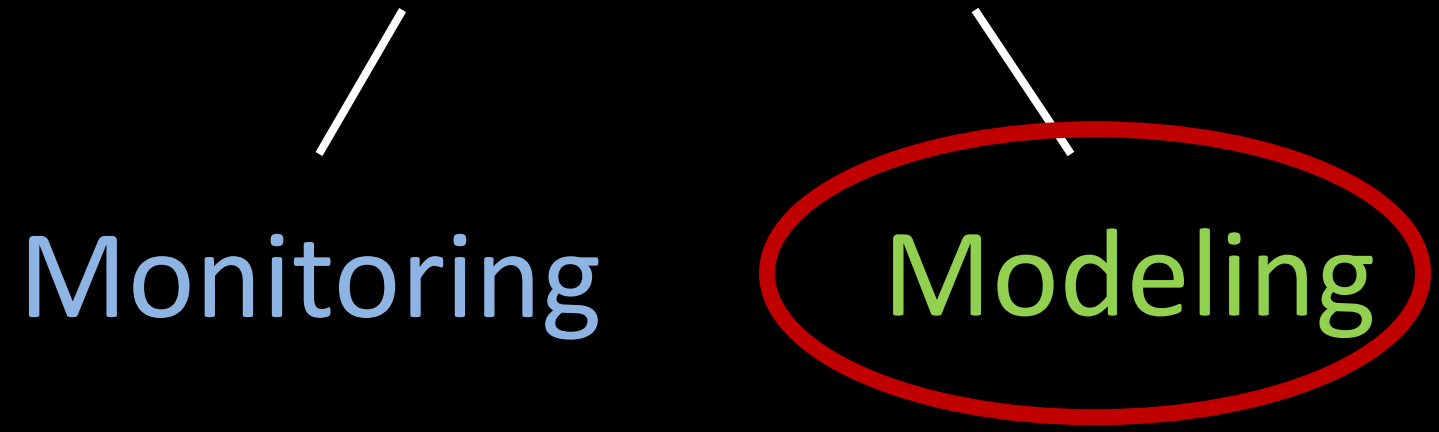
Your land. Your air. Your water.

Your vote.


©GraphicMaps.com
1400 mi
1400 km
ASIA
Philippines
Palau
Micronesia
Marshall Islands
Papua New Guinea
EQUATOR
0°
Nauru
Kiribati
Pacific Ocean
American Samoa
Indonesia
Tuvalu
Tahiti (France)
East Timor
Solomon Islands
Vanuatu
Samoa
Fiji
Tonga
TROPIC OF CAPRICORN
23.5°
Australia
OCEANIA
Sydney
New Zealand
Tasmania (Australia)
Indian Ocean
180°
Arctic
Pacific
Atlantic
Indian
Indian
Southern

My job with CRC?

Scientific, Technical Assessment, and Reporting (STAR) Team



Scientific, Technical Assessment, and Reporting (STAR) Team

Midpoint Assessment Priorities:

- "Analysis of Monitoring Data to Assess Progress"
- "Addressing Sediment in the Conowingo Reservoir and other Dams in the Bay Watershed"

Topical Meetings As Needed!

Next STAR Meeting: March 28th, 2013 10AM – 1PM
CBPO "Fish Shack"

Modeling Workgroup/Team

- Revisit Watershed Model (WSM) Calibration Methods
- Revise modeling system structure (transition to all PQUAL Model)
- Incorporate revised Airshed Model
- Extend the Airshed, WSM, and Water Quality and Sediment Transport model simulation period

Next Modeling WG Meeting: April 8th – 9th, 2013 CBPO 10AM – 3PM “Fish Shack”

Modeling Workgroup/Team

- Climate change
- Conowingo infill
- Filter feeders
- Shallow water simulation
- James River chlorophyll

Busy! Busy! Busy!

Next Modeling WG Meeting: April 8th – 9th, 2013 CBPO 10AM – 3PM “Fish Shack”

Modeling Laboratory Action Team

Function

Budget

Virtual vs. Bricks and Mortar

Structure

Reasoning

Purpose

Governance

Next MLAT Meeting: March 26th, 2013 1PM – 3PM Conference Call

Current Responsibilities within the CBP

Run CBP Watershed Model

Administrative tasks

WSM output for Academic Partners

Run CBP Interpolator

Prepare documents

Editing journals and manuals

Professional Development

Training

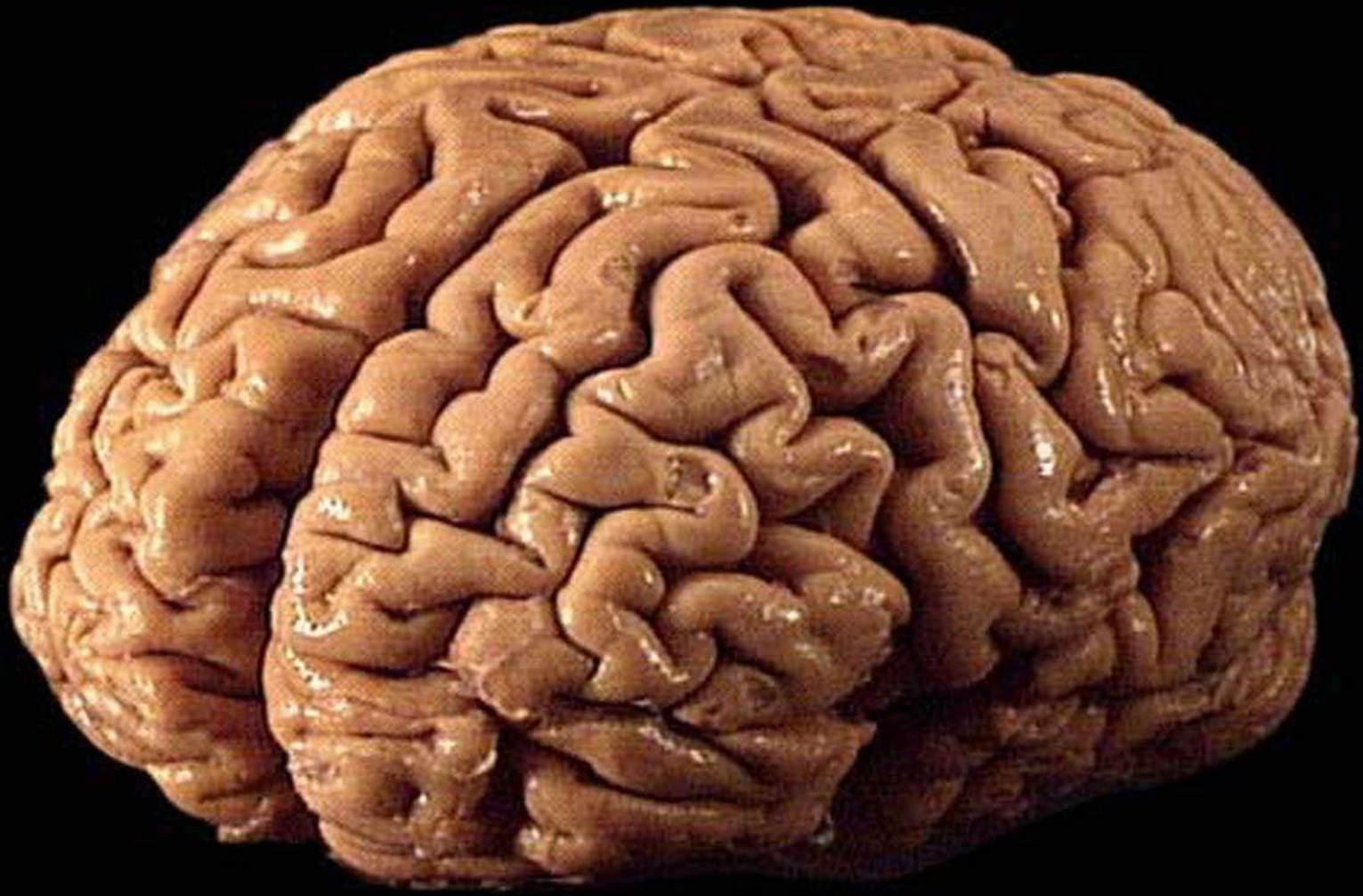
GIS – ESRI online courses

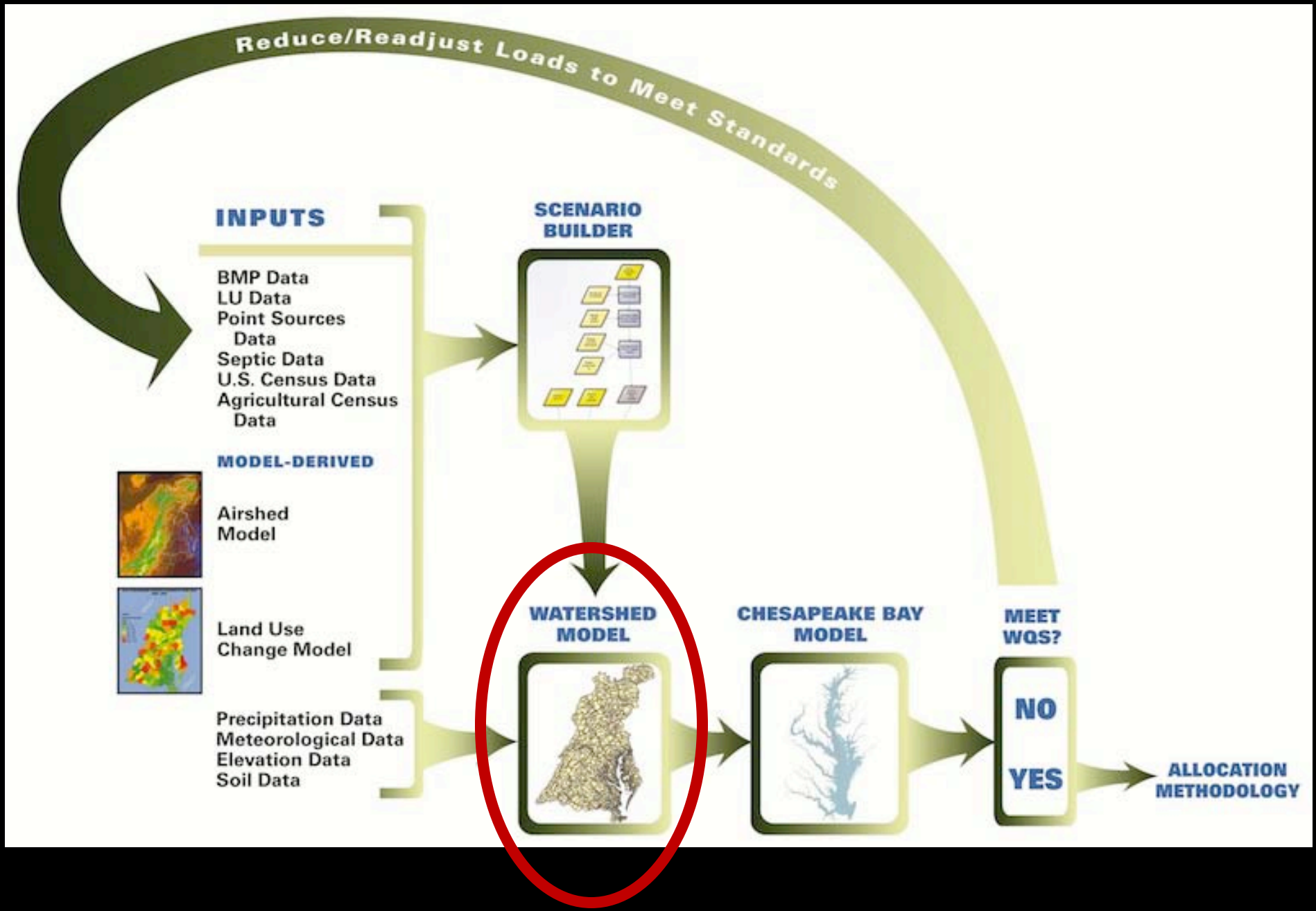
Fortran

R statistical programming environment

Linux

Suggestions?




Reduce/Readjust Loads to Meet Standards
INPUTS
BMP Data
LU Data
Point Sources Data
Septic Data
U.S. Census Data
Agricultural Census Data
MODEL-DERIVED
Airshed Model
Land Use Change Model
Precipitation Data
Meteorological Data
Elevation Data
Soil Data
SCENARIO BUILDER
WATERSHED MODEL
CHESAPEAKE BAY MODEL
MEET WQS?
NO
YES
ALLOCATION METHODOLOGY

Communicate!


Future
NEXT EXIT

Graduate School

Civil and Environmental Engineering
Biological Systems Engineering
Agricultural and Biological Engineering

Suggestions?

Thank you for listening!

Questions?

Advice?

Contact Information:

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(443) 618-3092 - cell, F

Ask for a resume or business card!

For more information:

Scientific, Technical Assessment, and Reporting (STAR) Team:
http://www.chesapeakebay.net/groups/group/scientific_and_technical_analysis_and_reporting

Modeling Workgroup: http://www.chesapeakebay.net/groups/group/modeling_team

Modeling Laboratory Action Team:
http://www.chesapeakebay.net/groups/group/modeling_lab_action_team

Washington College: http://www.washcoll.edu/

Maryland League of Conservation Voters: http://www.mdlcv.org/

National Science Foundation Research Experience for Undergraduates:
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&org=NSF

Oakland University: http://www.oakland.edu/math/

NOAA Hollings Scholars: http://www.oesd.noaa.gov/scholarships/hollings.html

Fagatele Bay National Marine Sancutary: http://americansamoa.noaa.gov/

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American Samoa snorkeling picture: Victoria Szlag (fellow NOAA Hollings Scholar)

American Samoa map: www.worldatlas.com

American Foulbrood Disease picture: beeinformed.org

Brain picture: www.hjnews.com

“Future Next Exit” picture: www.futureagenda.org