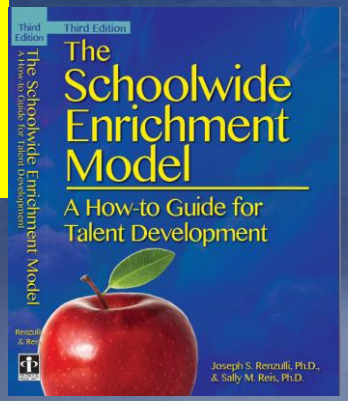

Why SEM Programs and Pedagogy Make A Difference in Children's Lives: Four Decades of Research
Sally M. Reis

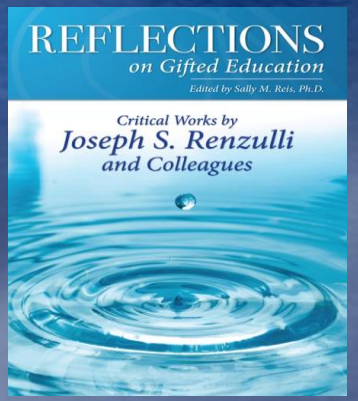
# 40

# Research And Development On The Schoolwide Enrichment Model

www.gifted.uconn.edu

SEM Folder



# Theme One

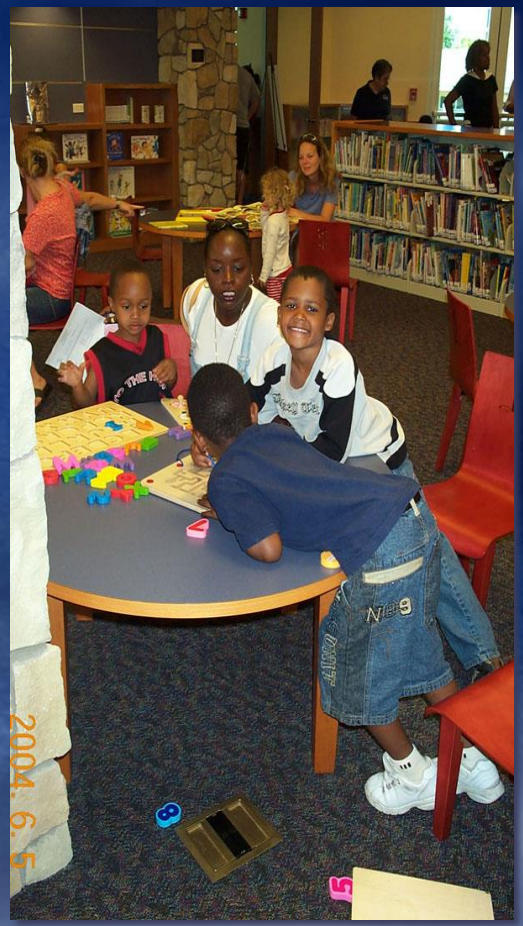
- Enrichment programs and opportunities offer rich, challenging curriculum in both **regular and gifted** education programs and they can make a profound difference in the lives of students (even when they participate for 2-3 hours each week).

# Theme Two

- When teachers use SEM-enrichment-based approaches to learning and extend the pedagogy of gifted education to all children, learning is more engaging and enjoyable and all students are able to make continuous progress.

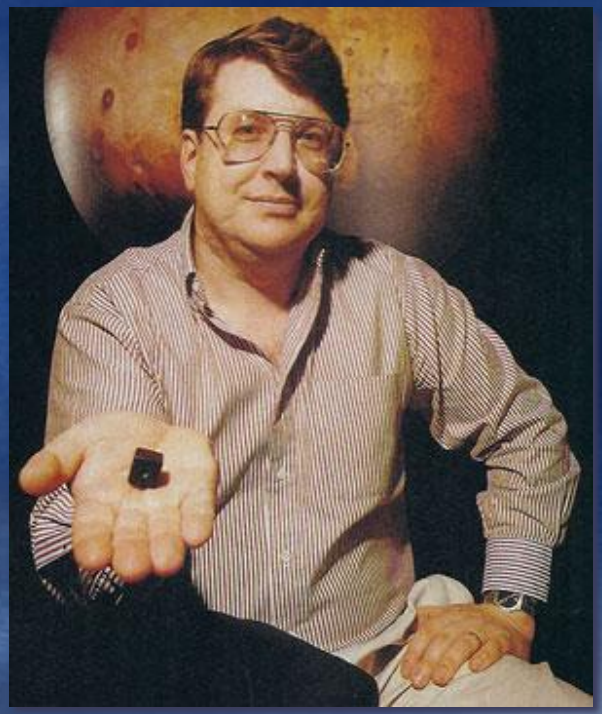
# Theme Three

The use of creative and joyful teaching does not result in lower test scores! Rather, achievement scores INCREASE when we use creative teaching methods, differentiated instruction and enrichment pedagogy.



# Theme Four

The most important predictor of subsequent high creative productivity for academically talented students is the creation and enhancement of their interests, the development of their task commitment and learned positive reaction to challenge.



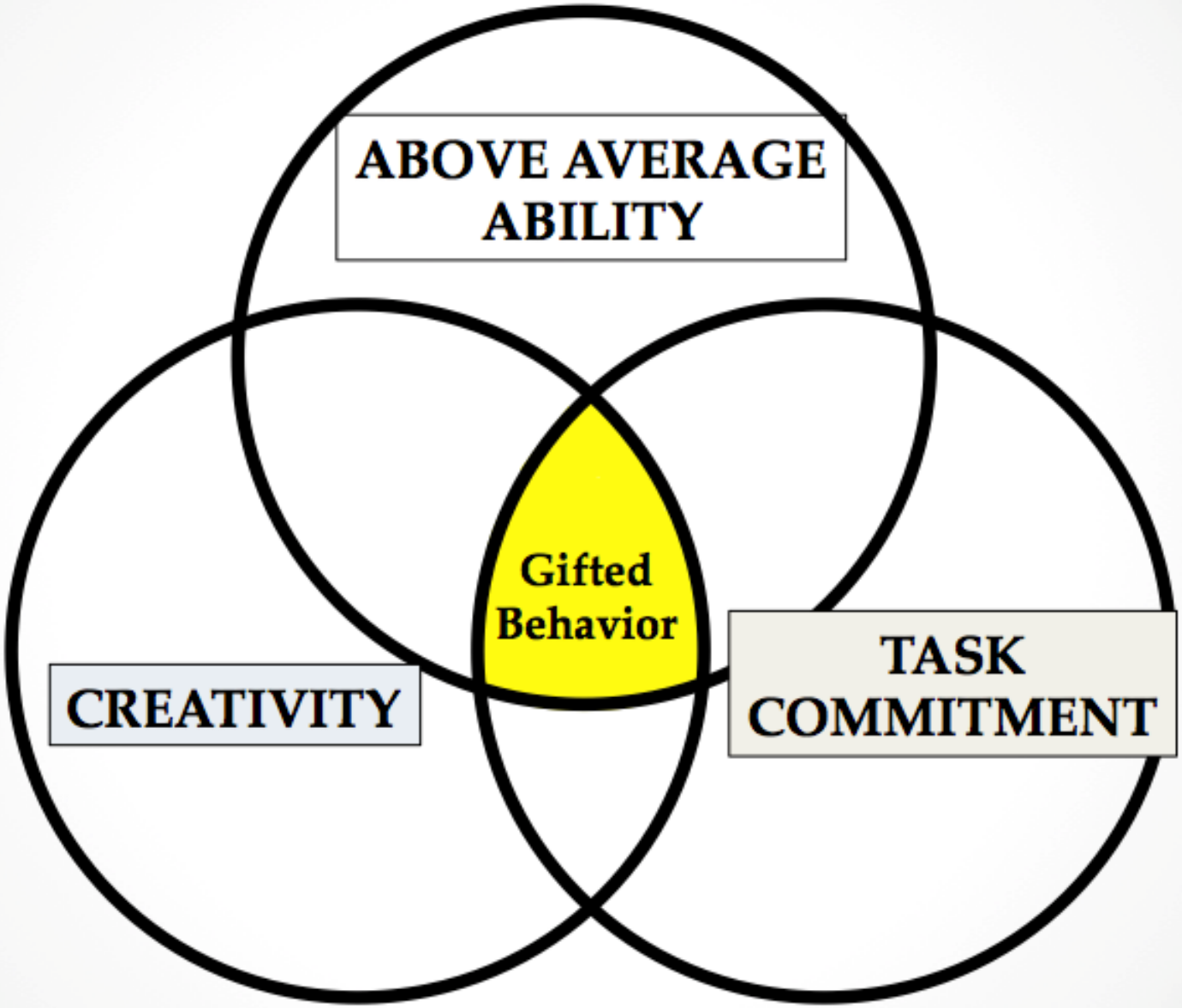
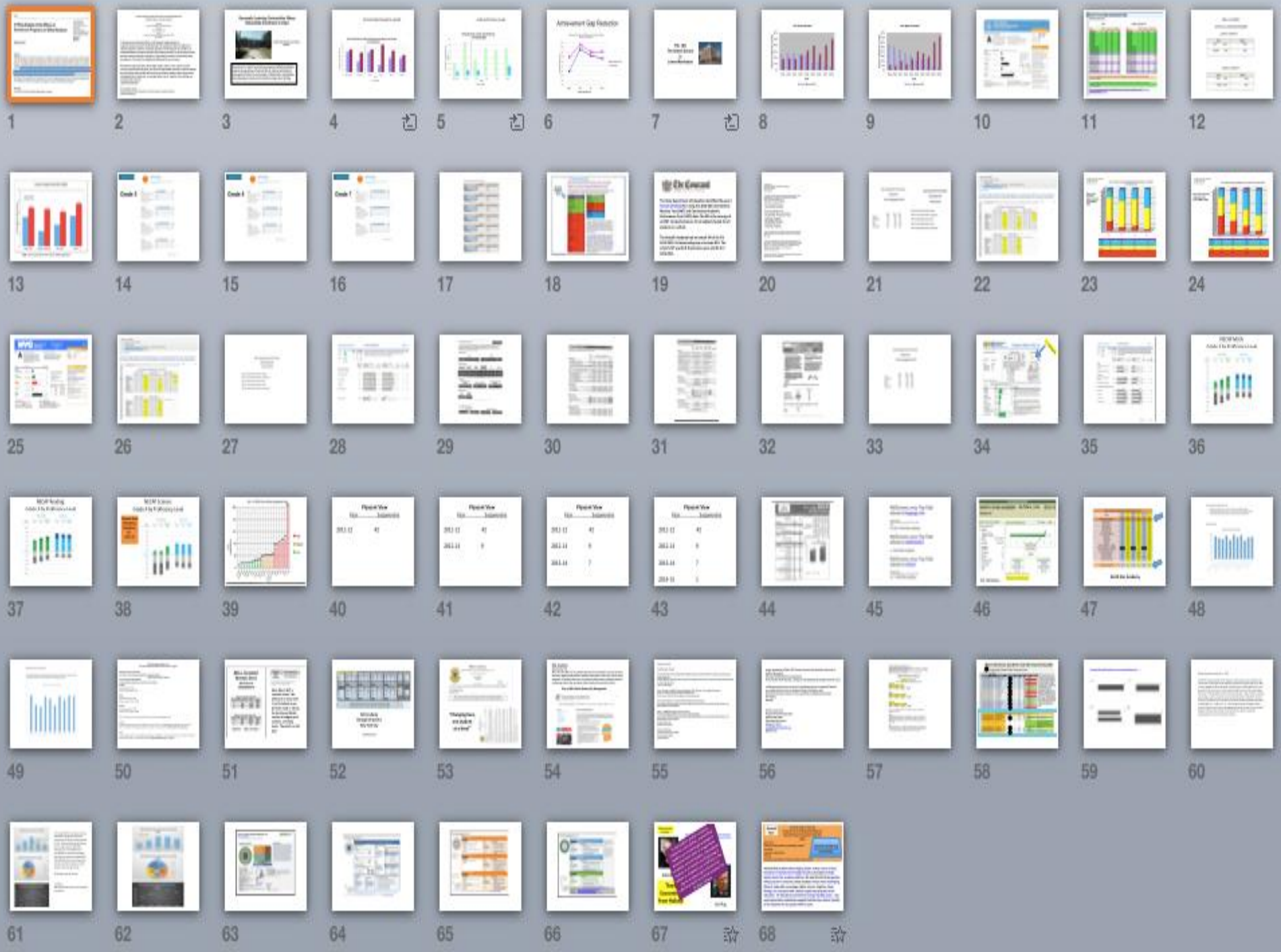



Figure 1. The Three Ring Conception of Giftedness JSR: 1978



# The Schoolwide Enrichment Model

(Renzulli & Reis, 1985, 1997, 2015)

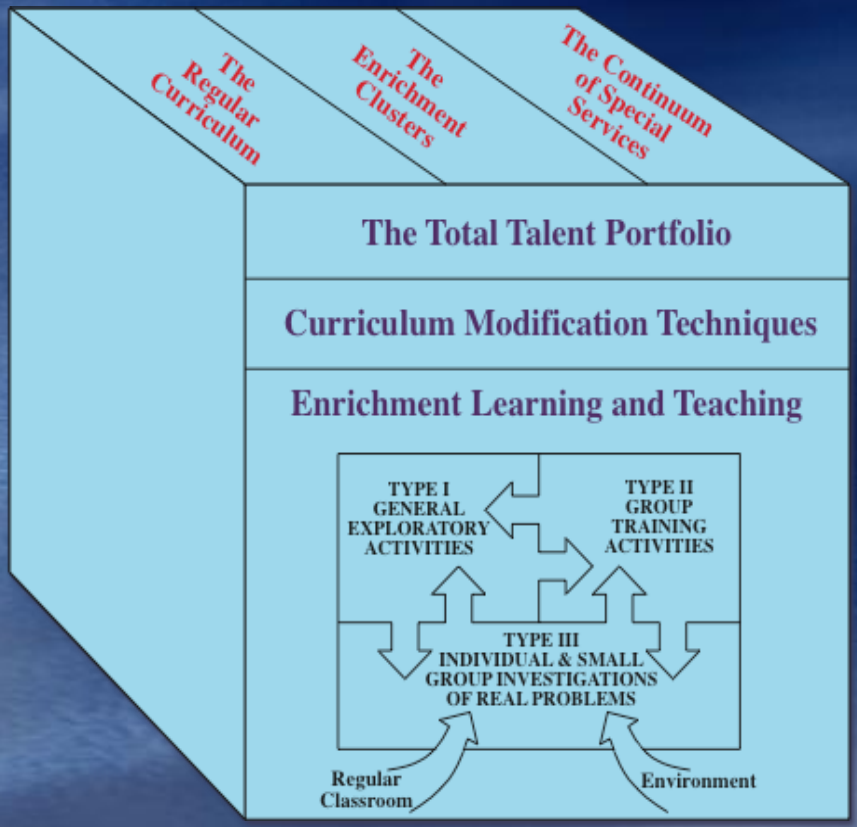
Evolved from over 40 years of research and field testing. It has three major components:

- The Total Talent Portfolio
- Curriculum Compacting
- Enrichment Learning and Teaching

Applied to:

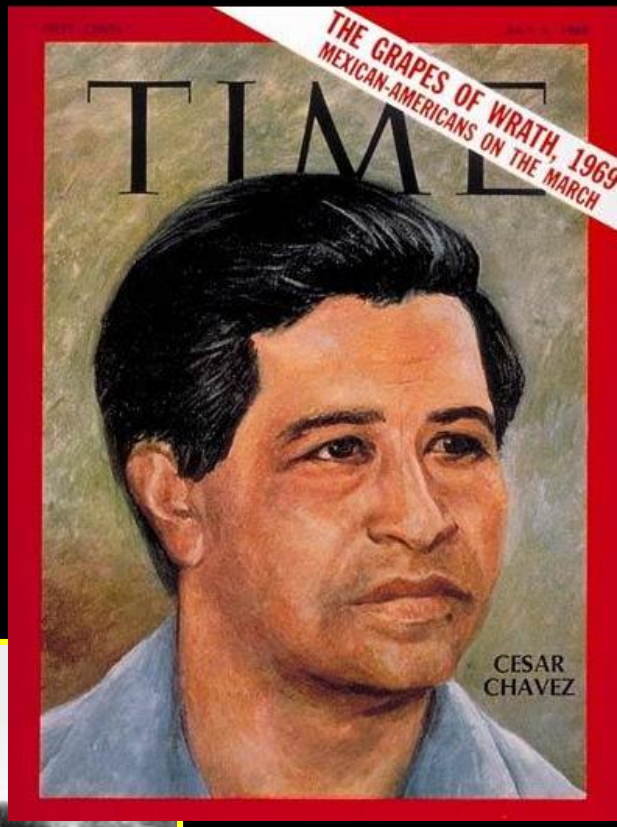
the regular curriculum, enrichment clusters

continuum of services



# What happens to students who graduate from these types of programs?

# What kind of program can create the next . . .



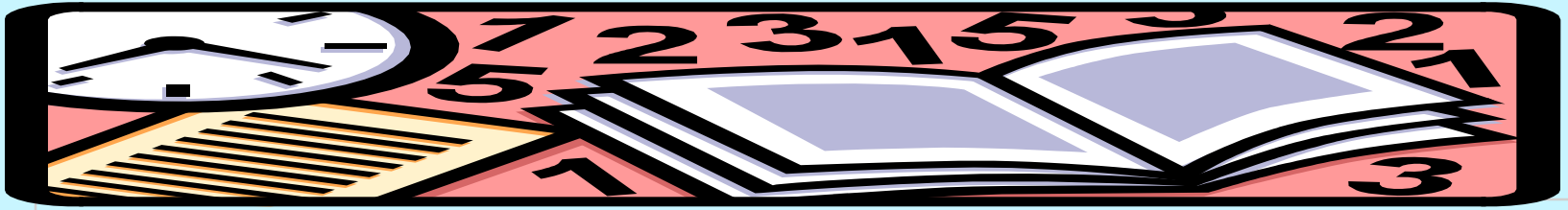

***Look in my face,***

***My name is might***
***have been.***

— Dante Gabriel Rossetti

# SEM Program Goals

- Students will be academically challenged and engaged in advanced learning experiences.
- Students will explore and develop their interests.
- Students will develop their creativity and task commitment.
- Students will be encouraged to develop their talents and become leaders committed to social action and improving their world.



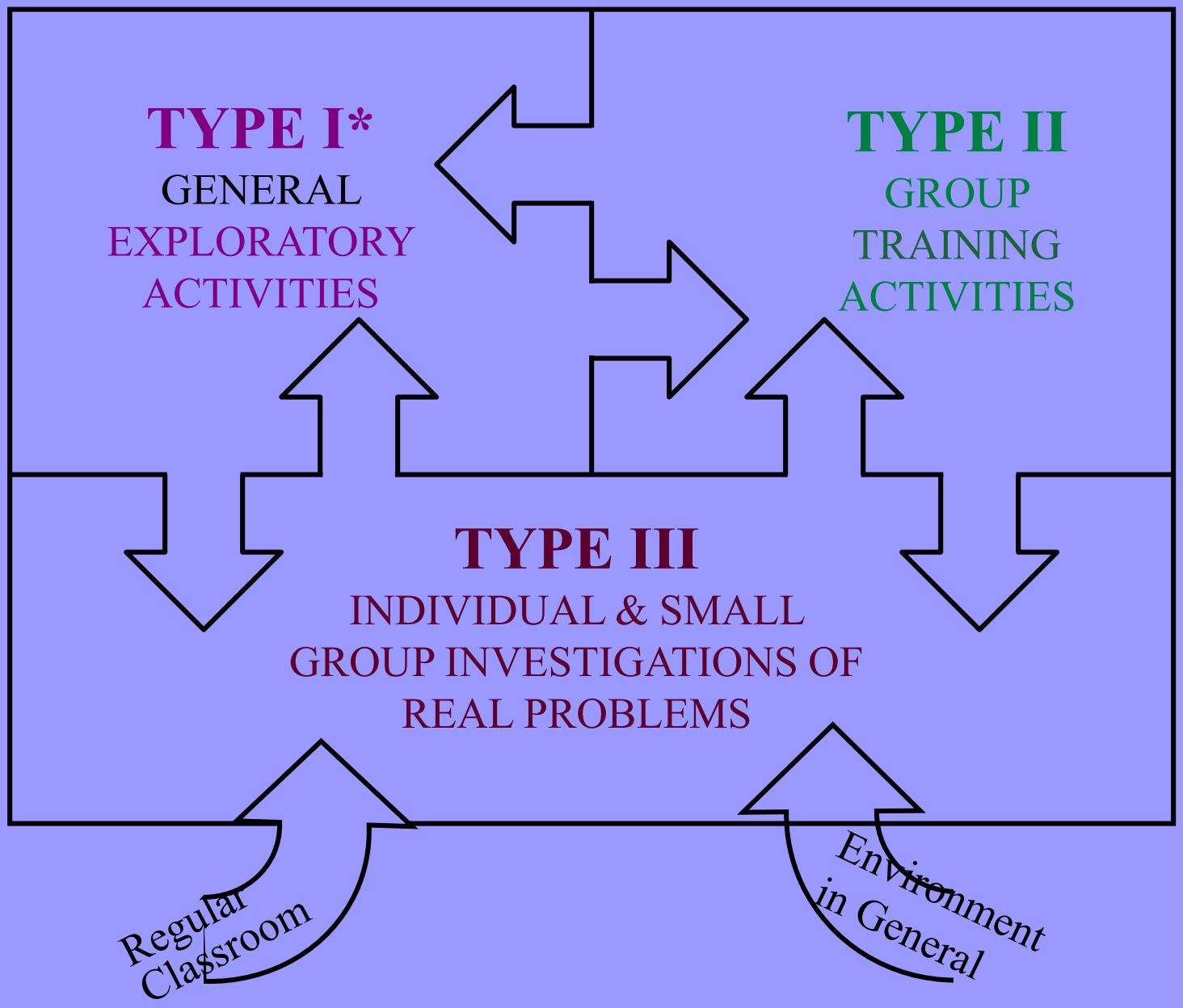
Sally,

A few years I emailed you about my doctoral program work and described my research in pharmacological chemistry. I also reminded you of all of the Type III products I did in the TAG Program. I finished with my doctorate and was invited to give a seminar at UCONN in the School of Pharmacy next month. I was writing to see if you would be available for lunch and perhaps you can attend my seminar? Looking forward to reconnecting.

Sherry

Department of Biochemistry and Biophysics, University of California

Dear Sally, do you remember me? I have written to you periodically during the last ten years. I write to tell you that I finished my doctorate last week and that I have regretted not staying in closer touch. I often think about why I was able to finish my degree-- a poor kid whose parents didn't even attend college. The courage and confidence to believe I could finish a Ph.D. came from my earliest years in the gifted program in Torrington. . . I think what made me want to pursue a career in research were my earliest Type III Projects.


TYPE I*
GENERAL
EXPLORATORY
ACTIVITIES
TYPE II
GROUP
TRAINING
ACTIVITIES
TYPE III
INDIVIDUAL & SMALL
GROUP INVESTIGATIONS OF
REAL PROBLEMS
Regular
Classroom
Environment
in General


SKULL
RIBS

**From the group of 6 students who worked on Bobby Bones….**

Four attended and graduated from Medical School!

# Longitudinal findings….

**The Type III process serves as important training for later creative productivity. Students perceived their Type III experiences as life-shaping influences on**

- **college and careers**
- **continued desire for creative outlets throughout education and life**
- **the consistent enhancement of non-intellectual characteristics (task commitment, curiosity, creativity)**

Hébert, Thomas P. (1993). A developmental examination of young creative producers. *Roeper Review: A Journal on Gifted Education, 16,* 22-28.

# What Happens to Young, Creative Producers?

**Karen Westberg**

A Longitudinal Study of Students who Participated in a Program based on the Enrichment Triad Model

Photo by Tom Fischer

Grant during middle school invented a shoelace clip

By 28 years old, he had completed his doctoral work at Cal Tech in aeronautical engineering, was employed at Hughes Aeronautical

- Maintained his interests in creative writing with the completion of nine novels.

- **These interests were documented on his interest-a-lyzer (Renzulli, 1977) relate to hi his current activities.**

# Characteristics of High-Level Creative Productivity: A Longitudinal Study of Students Identified by Renzulli's Three-Ring Conception of Giftedness

**Marcia Delcourt**

Strong childhood interests developed in the Enrichment Triad Program

Overall Importance of Projects


The Type III interests of students affected their post-secondary plans. In many cases, their career interests were a synthesis of their early Type III interests as young children, leading to . . .

Type IV--life and career choices based on interests.

# "Growing" Interests

photo by Amy Doerring

**Marcia Delcourt found that:**

Students made meaningful contributions in Type III projects.

….had a sense of pride and accomplishment.

…. developed expertise and confidence in becoming an adult creative producer.

- **Students who completed Type III's in Triad programs initiated their own creative products in and out of school three times more often than a control group.**

- **Students in the enrichment group completed twice as many creative projects per student.**

**(**The Effects of the Enrichment Triad Model on Creative Productivity and Self-Efficacy-- **Alane Starko)**

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**The Type III interests of students affected their post-secondary plans. In many cases, their career interests were a synthesis of their early Type III interests as young children, leading to . . .**

**Type IV--life and career choices based on interests.**

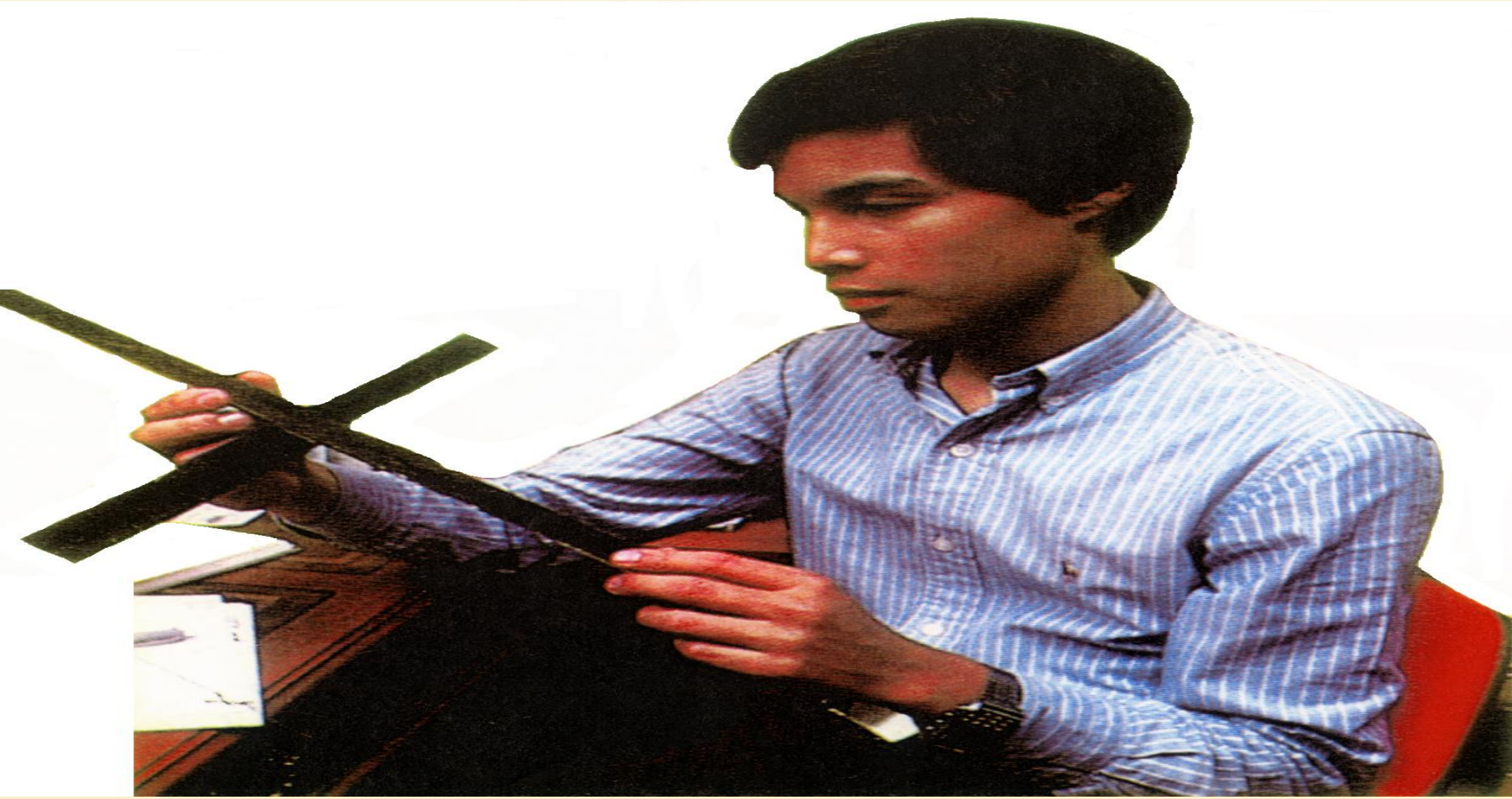
# Park, Lubinski, & Benbow (2007)

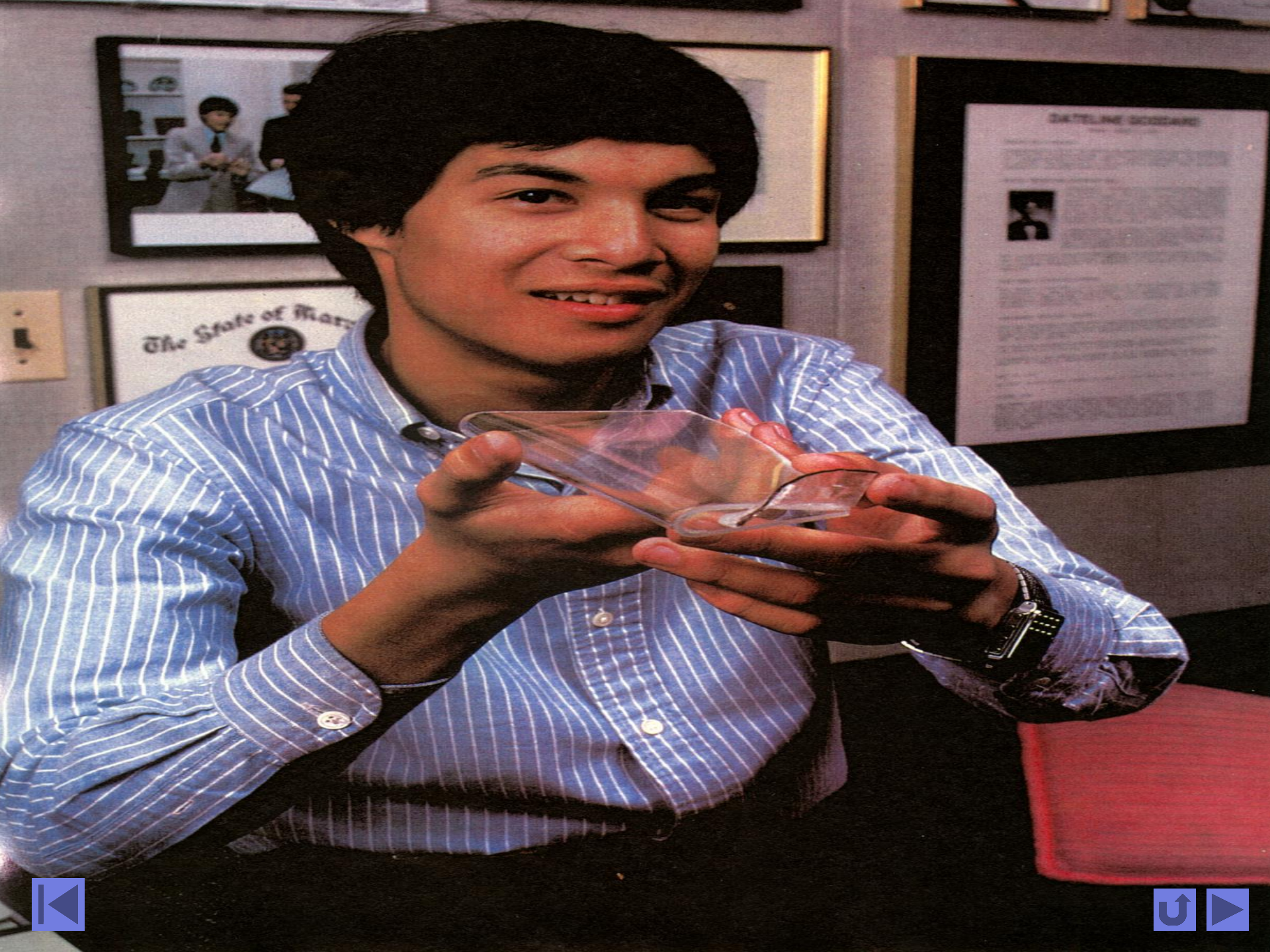
- A sample of 2,409 intellectually talented adolescents (top 1%) who were assessed on the SAT by age 13 was tracked longitudinally for more than 25 years. **Their creative accomplishments, with particular emphasis on literary achievement and scientific-technical innovation, were examined and results showed that distinct ability and interest patterns identified by age 13** portend contrasting forms of creative expression by middle age.

# Follow-up Studies…

Just a few SEM Programs in Connecticut and Maryland

West Hartford, Avon, Simsbury, Talcott Mountain Science Center




The State of Mary

**Jody Bourgeois**
**Simsbury Gifted Program**
**Type III: Proved that a land form was not really a drumlin in a glacier's path through Connecticut, but was instead, an ice channel deposit, surprising the experts.**

# She attended Barnard College at Columbia, then…

- Completed a Ph.D. in Geology
- Became a professor at the University of Washington
- Authored the Standard Text on

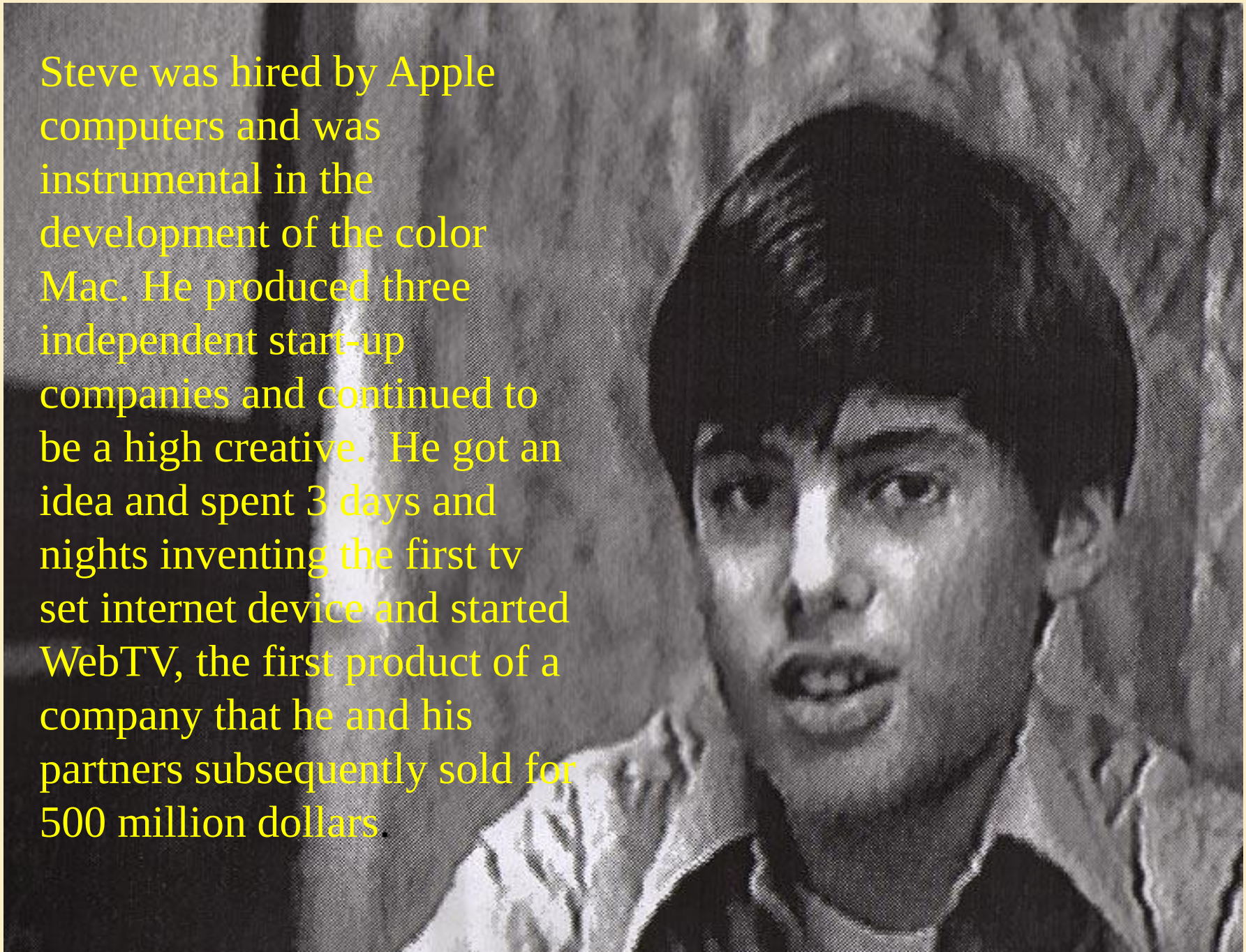
  Sedimentary Geology

**http://www.ess.washington.edu/content/people/profile.php?pid=bourgeois--joanne**

# Dr. Joanne (Jody) Bourgeois

- Jody) Bourgeois of the University of Washington (UW)-Seattle was honored with the 2015 Sloss Award in recognition of her pioneering work on storm and tsunami deposits, her dedicated educational and scientific leadership, and her generous service to GSA and the profession.
- Bourgeois advanced the study of storm deposits through analysis of Cretaceous to Neogene shoreface and continental-shelf facies.

**Steve Perlman--Participated in the West Hartford Enrichment Program and worked on a research project at Talcott Mountain Science Center where he built his first computer. He attended Columbia University where he invented a system that enabled students to write papers from their dorms and send them to the computer center electronically.**



Steve was hired by Apple computers and was instrumental in the development of the color Mac. He produced three independent start-up companies and continued to be a high creative. He got an idea and spent 3 days and nights inventing the first tv set internet device and started WebTV, the first product of a company that he and his partners subsequently sold for 500 million dollars.

# Updates

- **Stephen G. "Steve" Perlman** is an entrepreneur and inventor of Internet, entertainment, multimedia, consumer electronics and communications technologies and services. He is best known for the development of
- QuickTime, WebTV, OnLive, pCell and Mova Contour facial capture technologies. In addition founding startup companies, Perlman was a Microsoft division president and a principal scientist at Apple Computer.[1][2]


Click to Play
Flash Player 10 Ready


onLIVE

# Steve Perlman

Gave his first million dollars to Talcott Mountain Science Center as a donation!

# Dr. Linda Ivany

Paleontologist

Ph.D. Geology, Harvard University

Research:  Mass Extinction 34 years ago and new directions about global climate change and the history of our earth.

Gifted Program graduate from Connecticut—all she ever wanted to do was study dinosaurs

# Linda Ivany today

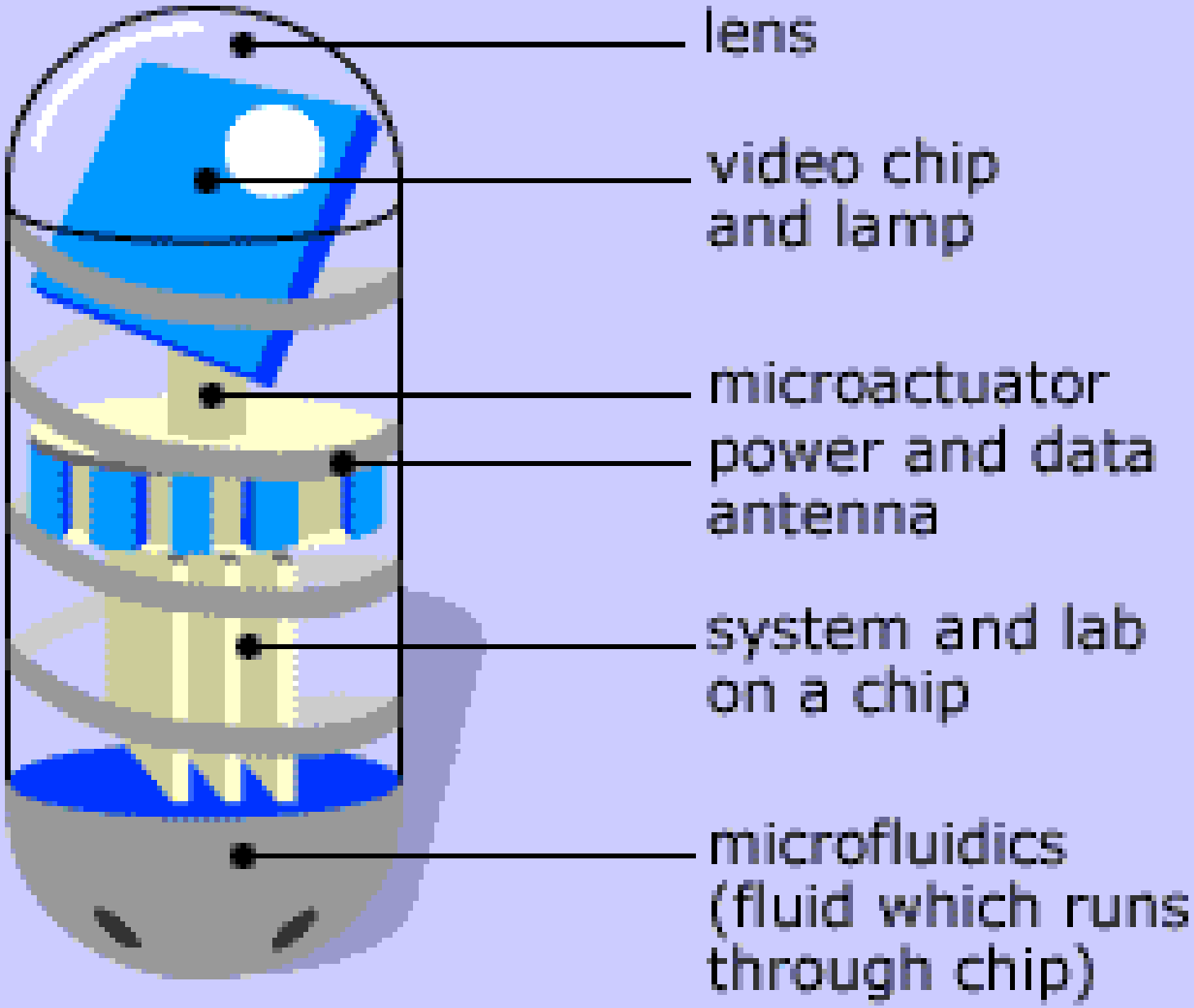
- Professor Ivany's work fits broadly into the fields of earth history and marine paleoecology and paleoclimate, and relates to how ecosystems and their component taxa evolve and respond to changes in the physical environment on a variety of temporal and spatial scales.
- She has particular interest in the biotic and climatic evolution of the early Cenozoic, with longstanding projects in the molluscan records of the US Gulf Coastal Plain and Antarctica. Work on the chemistry of Permian and Cretaceous bivalves relates to paleoseasonality and the oxygen isotopic composition of seawater.
- Ivany's research has been funded through the National Science Foundation and the American Chemical Society's Petroleum Research Fund. She has served as both a Distinguished Lecturer and Councilor-at-Large for the Paleontological Society, and is a member and past president of the Board of Trustees for the Paleontological Research Institution in Ithaca NY. She is active in the peer-review process for NSF and a variety of disciplinary journals, including Associate Editor stints with *Geology, Geobiology, and Paleobiology*. She is a Fellow of the Paleontological Society and the Geological Society of America.

# Then and now—

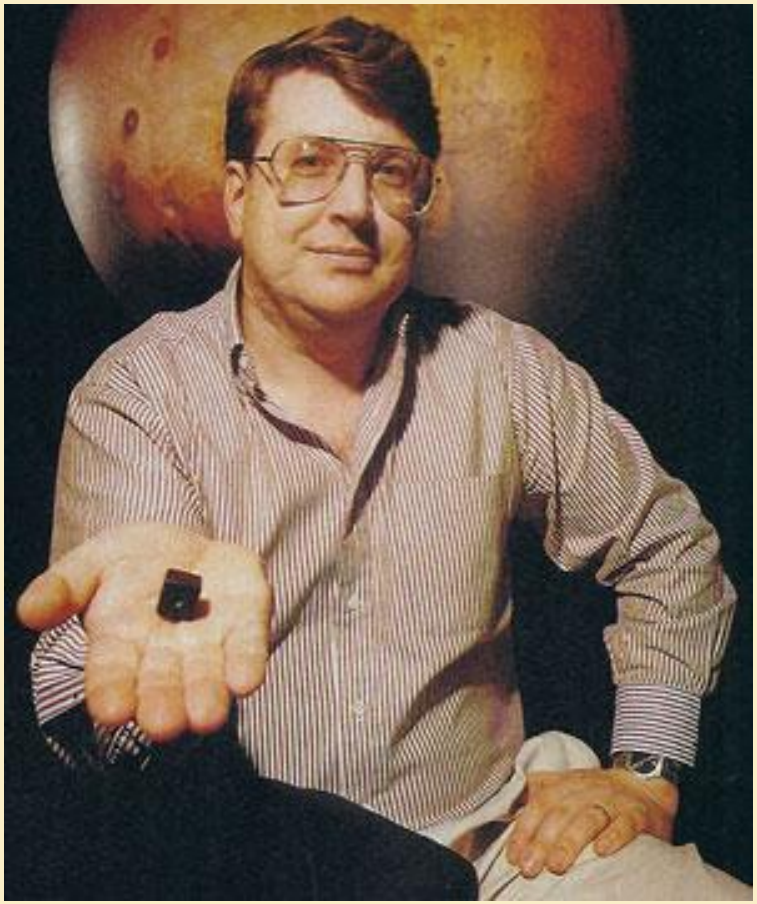
**Linda Ivany**
**Professor, Earth Sciences and Director of Undergraduate Studies, Syracuse University**


- She has served as both a Distinguished Lecturer and Councilor-at-Large for the Paleontological Society, and is a member and past president of the Board of Trustees for the Paleontological Research Institution in Ithaca NY. She is a Fellow of the Paleontological Society and the Geological Society of America.

# PILL CAMERA OF THE FUTURE



# Eric Fossum today



Another enrichment program graduate from Connecticut

Interested in computers and photography

Attended Trinity College in Hartford and Yale for graduate school

Worked at NASA's jet propulsion lab where he used computer chips for photography.

# Eric Fossum

- Despite initial skepticism by entrenched CCD manufacturers, his CMOS image sensor technology is now used in almost all cell-phone cameras, many medical applications such as capsule endoscopy and dental x-ray systems, scientific imaging, automotive safety systems, DSLR digital cameras and many other applications.

Fossum is one of four engineers awarded the £1 million Queen Elizabeth Prize this month for his invention.

# Jennifer Weiner

Another gifted program graduate from Connecticut

Interested in creative writing

Student in the Simsbury SEM Program Author of several books, two on the New York Times Book List.

including:

Good in Bed

In Her Shoes

Little Earthquakes

**Jennifer Weiner** (born March 28, 1970) is an American writer, television producer, and former journalist. She lives in Philadelphia, Pennsylvania. Her debut novel, published in 2001, was *Good in Bed*. Her novel *In Her Shoes* (2002) was made into a movie starring Cameron Diaz, Toni Collette, and Shirley MacLaine— Graduate of Simsbury High School, Princeton (entered at age 17).

# HUNGRY HEART

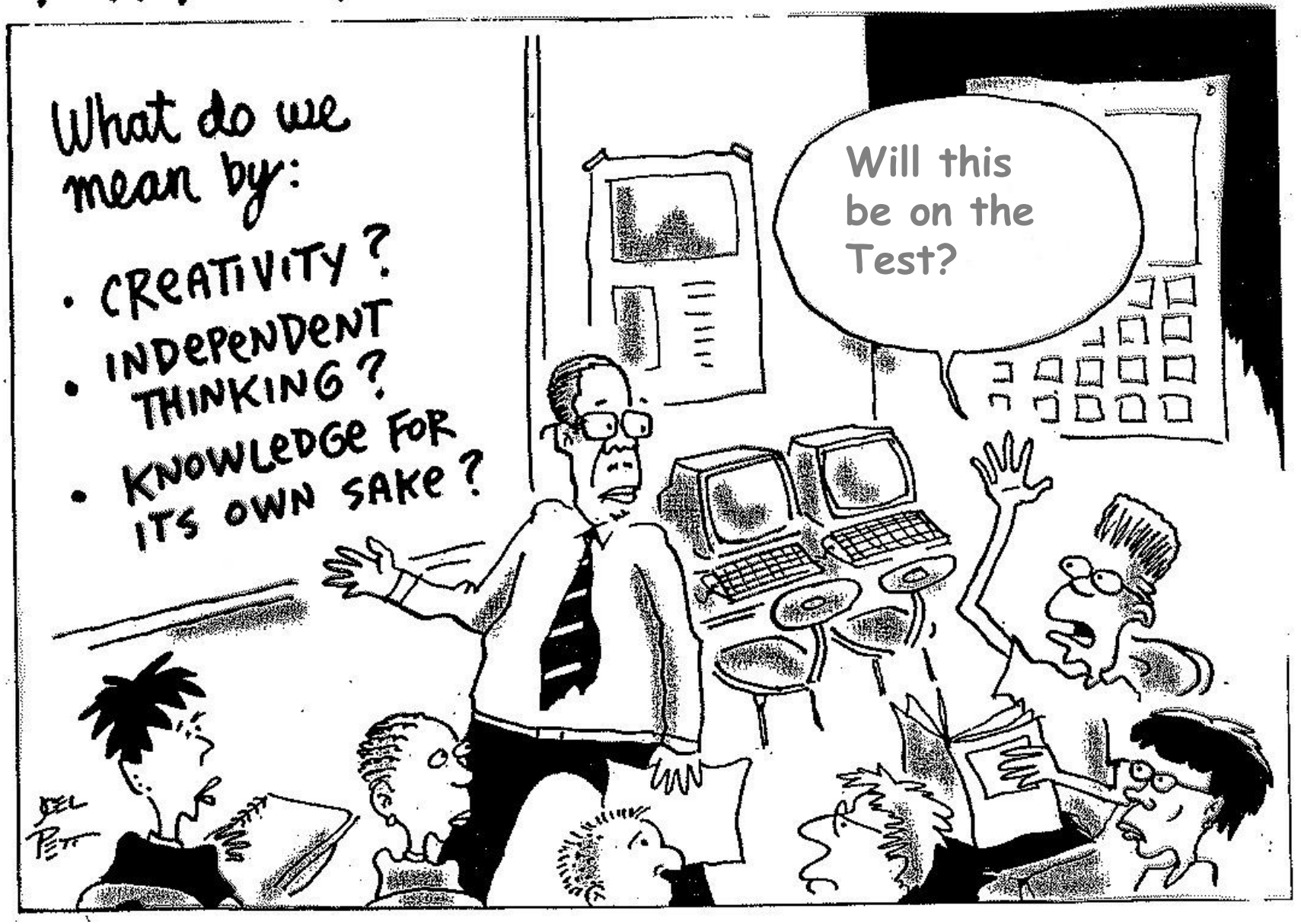
ADVENTURES *in* LIFE, LOVE, *and* WRITING

jennifer Weiner

#1 *NEW YORK TIMES* BESTSELLING AUTHOR

# Pett Peeves

BY JOEL PETT



Renzulli Academy 92.8



# How We Stack Up

## *What the State's New School Performance Index Tells Hartford*

**When the new School Performance Index was developed by the State, it shone a spotlight on every school in CT - including those in Hartford. Brace yourself.**

With the State Department of Education setting a target SPI level of 88 for every school, Hartford still has an incredibly long way to go. All tested schools in Hartford are listed in the two tables below.

| Elementary/Middle | 2012 SPI |
|---|---|
| RENZULLI ACADEMY | 92.8 |
| NOAH WEBSTER MICRO | 82.5 |
| ACHIEVEMENT FIRST | 78 |
| ANNIE FISHER MONT | 74.6 |
| HMTCA | 77.3 |
| CLASSICAL MAGNET | 73.8 |
| SPORTS & MED SCIENCE | 76.8 |
| BREAKTHROUGH MAGNET | 73.1 |
| STEM MAGNET | 77.5 |
| KINSELLA | 75.2 |
| CAPITAL PREP | 71.8 |
| PARKVILLE | 56.7 |
| HOOKER | 68.5 |
| ASIAN STUDIES | 50.4 |
| RAWSON SCH | 55.1 |
| IB GLOBAL COMMUNICATIONS | 51.2 |
| BURR | 53 |
| WEST MIDDLE | 57.1 |
| WISH | 54 |
| SIMPSON-WAVERLY | 54.4 |
| SANCHEZ | 50 |
| KENNELLY | 53.4 |
| BETANCES EARLY READING | 72.6 |
| NAYLOR | 52.1 |
| MLK | 50.3 |
| MOYLAN EXPEDITIONARY | 51.5 |
| BREAKTHROUGH 2 | 57.4 |
| BATCHELDER | 47.4 |
| RAWSON MIDDLE GRADES | 50.9 |
| SAND | 45.3 |
| M D FOX | 44.3 |
| CLARK | 42.7 |
| MCDONOUGH | 35.6 |
| BELIZZI MIDDLE GRADES | 35.8 |
| BURNS ACAD | 33.9 |
| MILNER ACAD | 33.8 |

| High Schools | 2012 SPI |
|---|---|
| UNIVERSITY HS | 77.5 |
| SPORTS & MED SCIENCE | 75 |
| CAPITAL PREP | 73 |
| CLASSICAL MAGNET | 69.7 |
| PATHWAYS TO TECH | 64.3 |
| BULKELEY HS LOWER | 40.9 |
| HIGH SCHOOL, INC. | 38.1 |
| JOURNALISM MEDIA | 36.4 |
| HPHS NURSING | 34.3 |
| HPHS LAW GOV | 32.9 |
| CULINARY ARTS | 30.3 |
| OPPORTUNITY HIGH | 39 |
| HPHS AOEGT | 25.1 |

As always, it's helpful to look at how Hartford as a district compares to other large urban districts in CT, where Hartford's improvement at the elementary/middle school level has pushed the percentage of schools scoring between proficient and target higher than some of its sister cities. At the high school level, it's clear there is a long way to go (as the graphs below demonstrate).

In a previous issue of Education Matters!, we both praised the state for its efforts to create a more comprehensive and consistent performance metric and suggested the need for more complex methods for measuring school – and student – achievement. In last week's Courant, Trinity Professor Jack Dougherty elaborates this same point, emphasizing how the state can do an even better job in using data to drive school improvement efforts. It's a great read and might be a game changer if read carefully and used to present information in more understandable ways.

# Students' Accomplishments

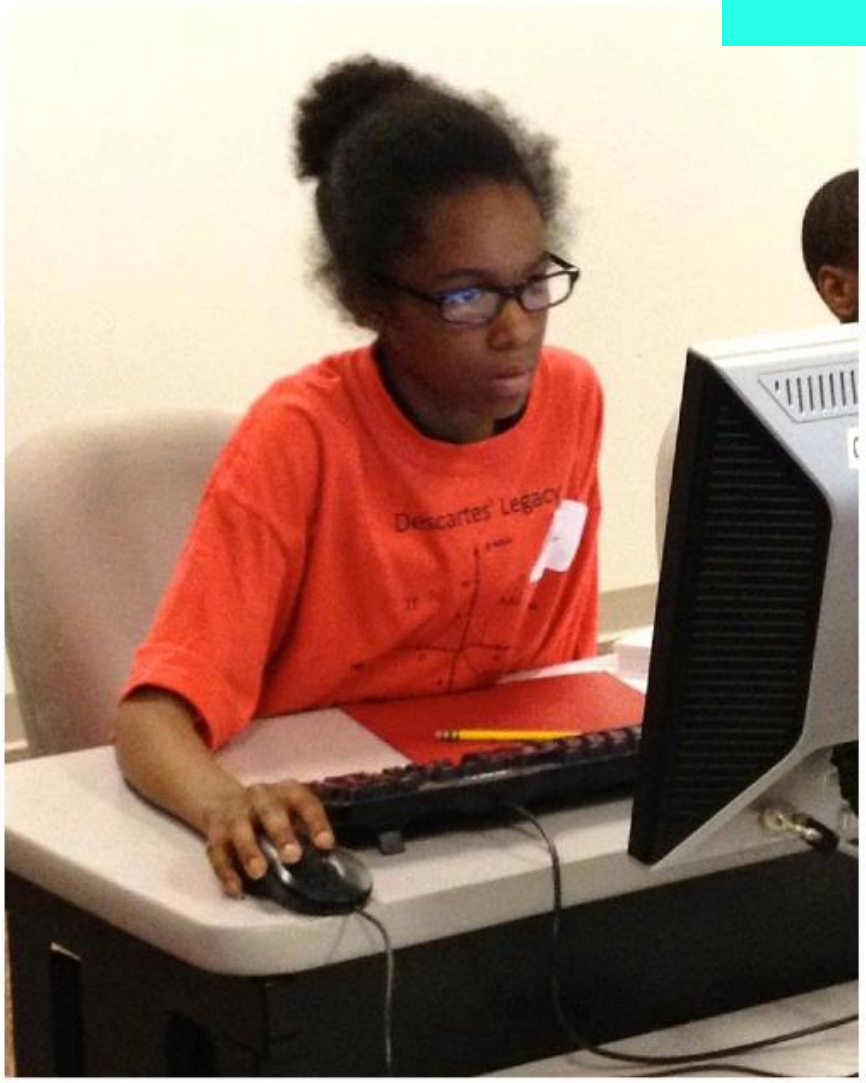
- Highest CMT scores within Hartford Public Schools
  - 2010: 89% of the student body at goal or mastery level
  - 2011: 95% of the student body at goal or mastery level

- Students participated in the National Geography Bee and had finalist in the state competition.

- State Level Winners at the Connecticut Invention Convention.

- Students participated and placed in Columbus State University's Math Contests.

# But it is more than just about the test scores…



Tiara Wright used binary codes to encode and decode decimal numbers to create her own set of "magic cards".

**Applying Knowledge To A Real World Problem**

**Applying Knowledge To A Real Problem**

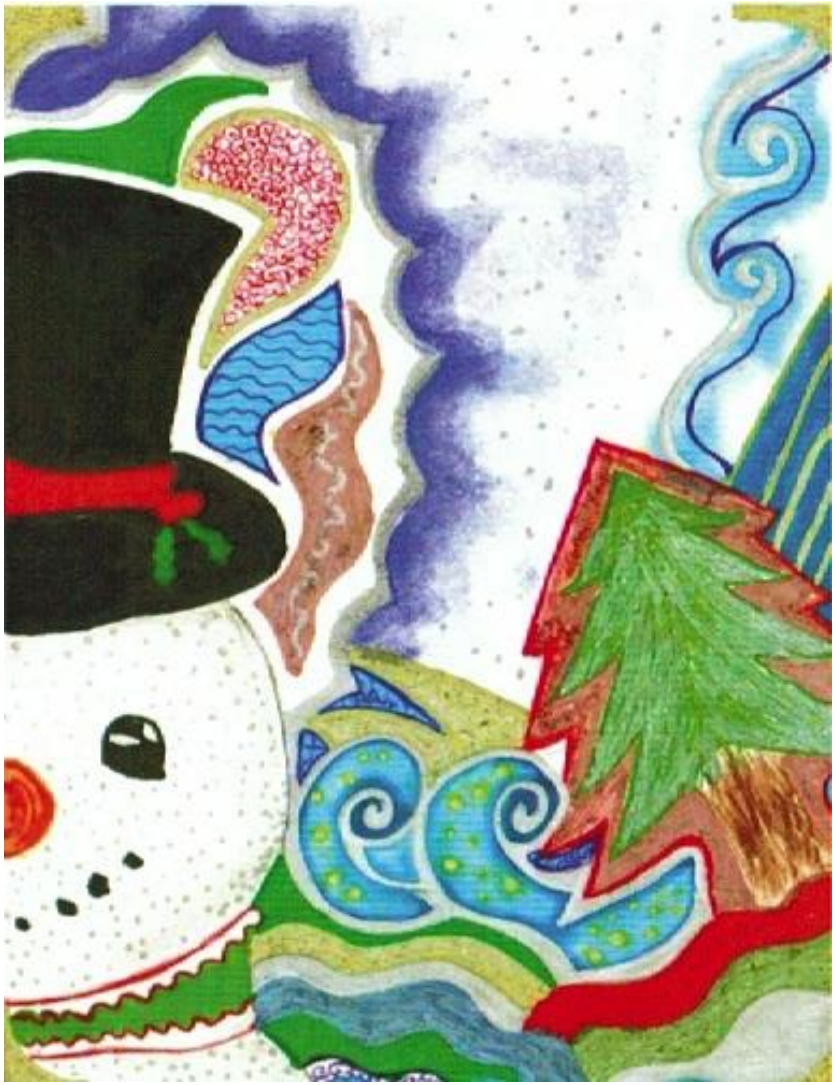
Keondre Latimer studied time's relationship to the sun's position and one's location on Earth.

**Applying Knowledge To A Real Problem**

Kimberly Alexander is working with Professor Charles Waiveris on making a fractal image that was uploaded to a web gallery.

**Applying Knowledge To A Real Problem**

# Creative Productivity



HARTFORD
PUBLIC SCHOOLS
Where the future is present

Artwork By:
Chadd James - Grade 8
The Renzulli Academy


Larry wore his medal to school for a week after winning regional honors in the National History Day comprtition…

# National Geographic Bee

- School Level Competition
- State Level Competition

# Baum's Study of Using Enrichment Triad Model with Students with LD


Creative Type III work can be used high ability, learning disabled students and is associated with improvement in the students' behavior, specifically the ability to self-regulate time on task; improve self-esteem; and development specific learning strategies.

# *Jacob Komar, Founder and CEO of Computers for Communities, Inc. and a Davidson Scholar*

Jacob Komar, age 13, from Burlington, CT, created "Computers for Communities, Inc." in order to help close the digital divide. Four years ago he observed that well-off families had computers but those who were poor did not. He saw thousands of outdated computers being discarded. Jacob put these two problems together and fashioned a solution. Given his amazing skills, he and other friends so far have been able to rebuild and give away over 1,000 computers to families in need.  He started the company when he was 9 years old!

# Jacob today

**Brown University doctoral** student Jacob Komar, left, showed Sen. Jack Reed an implantable, wireless, rechargeable device that detects brain activity and converts it into digital commands, allowing patients with severe paralysis to control a computer using thoughts.

# Baum's Study of Using Enrichment Triad Model with Students with LD

**Creative Type III studies, when used as an intervention with high ability, learning disabled students, was associated with improvement in the students' behavior, specifically the ability to self-regulate time on task; improve self-esteem; and development specific learning strategies.**

**Susan Baum, author of**
**To be Gifted and Learning Disabled**

# opportunities reduce underachievement


**When gifted students do underachieve, interventions make a difference. (See Baum, Hebert, and Renzulli—82% of underachievers reversed this pattern)**

.


The creative productivity and interests of students affected their post-secondary plans. In many cases, their career interests were a synthesis of their early Type III interests as young children, leading to . . .

Type IV--life and career choices based on interests and according to Baum, Hebert and Renzulli,

reversed their underachievement!

These creative learning opportunities would NOT have occur without sustained time in a enrichment or gifted program.

# SEM PROGRAMS CREATE PEAK MOMENTS:

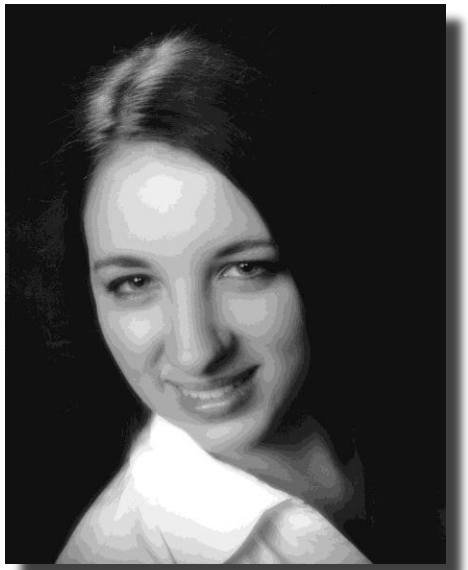
Making learning enjoyable

Helping students develop their interests and creativity

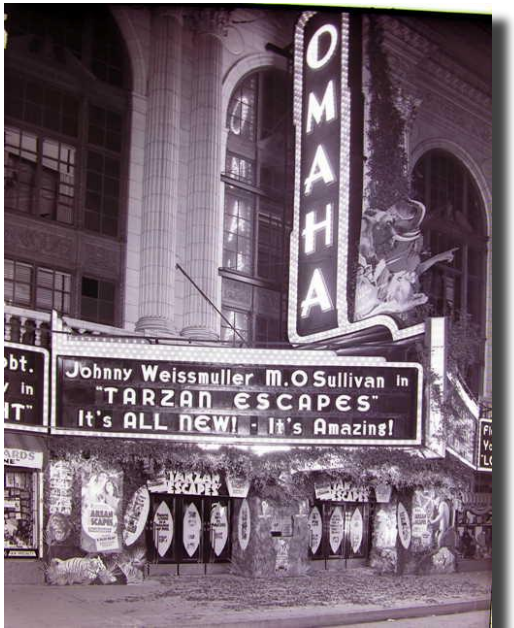
Having students learn to react to work of great depth and complexity

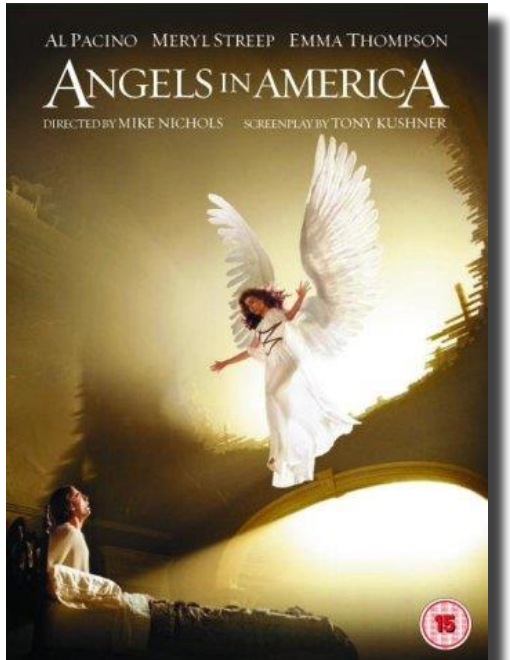
Developing task commitment and

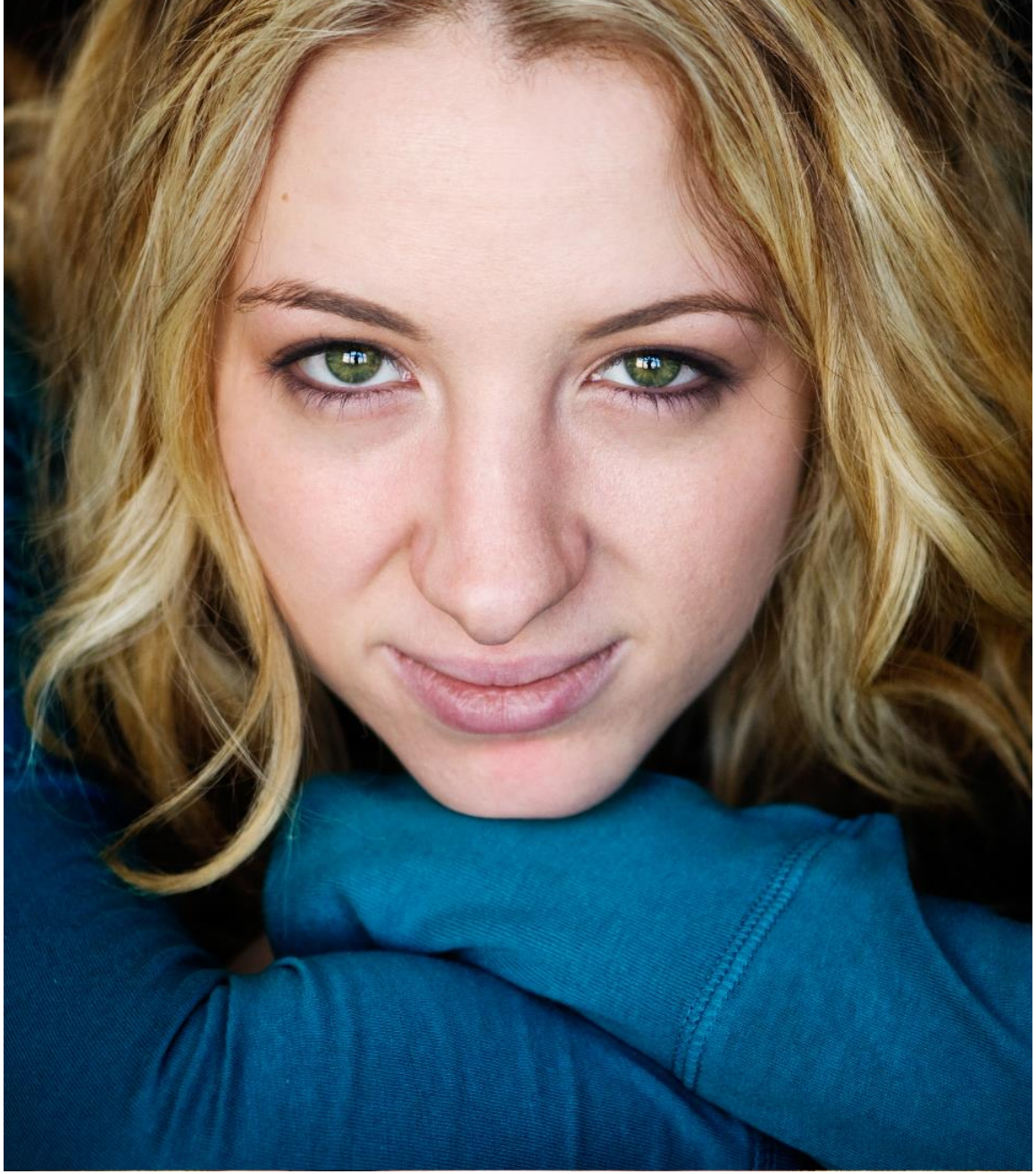
Creating talent development opportunities



# My Interest in Theatre





# What are the lasting benefits of our SEM enrichment programs?

- TIME for students to create and pursue interests

# Exposure to topics they may learn to love


**Opportunities**

**Resources**

**Encouragement**

# Learning about themselves


Identification of their abilities and talents, interests, learning and expression and styles.

Home | Glossary | Help | Logout

Renzulli™ LEARNING

AN ENRICHMENT DIFFERENTIATION SEARCH ENGINE

Renzulli Profiler™ | MY Enrichment Activities | MY Notebook

## RENZULLI PROFILER™:

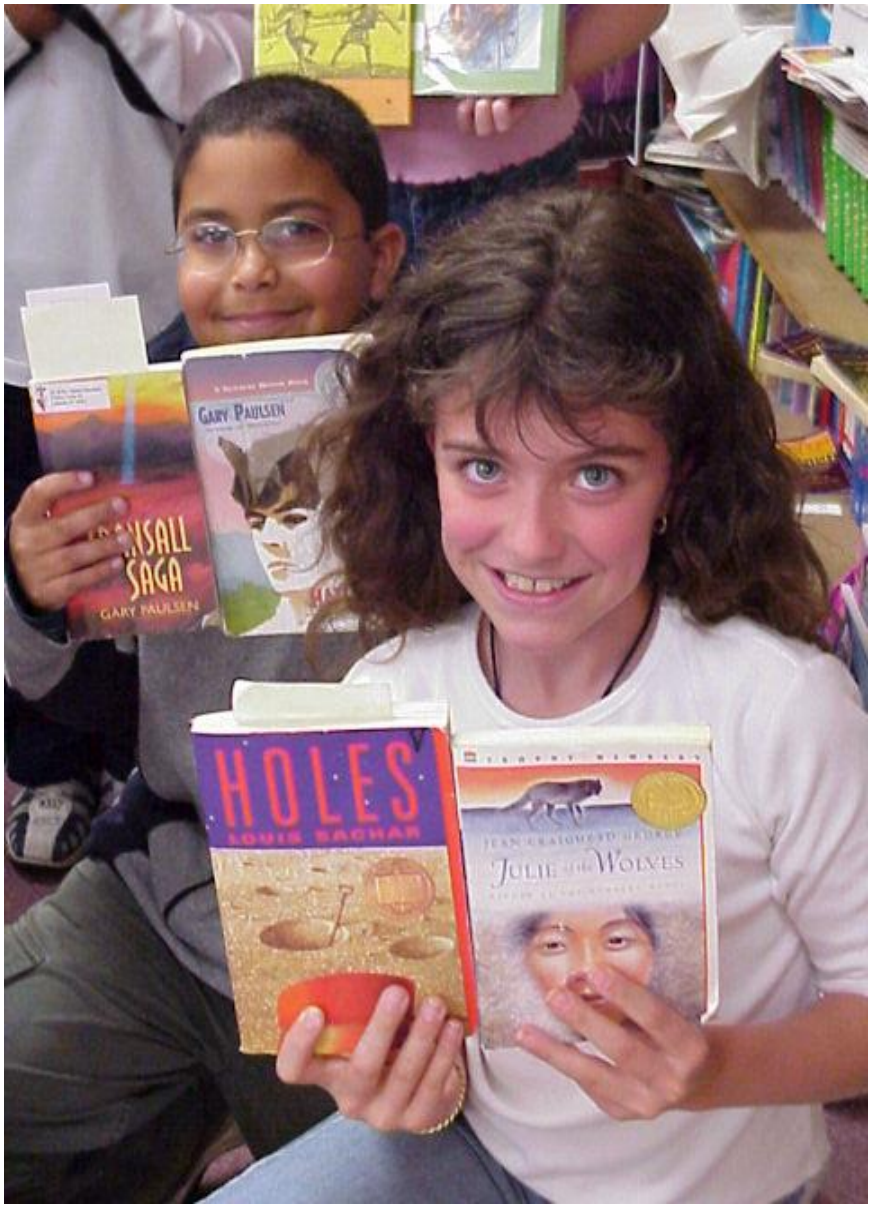
Now you are ready to start! We suggest you start with the first puzzle piece, Interest Areas. Then, you need to complete all of the other puzzle pieces. As soon as you have finished puzzle pieces 1-4, you will be able to view your profile, view enrichment activities, answer some open-ended questions, and work in your notebook.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Interest Areas Questions | Ability Questions | Expression Style Questions | Learning Style Questions |
| >Learn more | >Learn more | >Learn more | >Learn more |
| Incomplete | Incomplete | Incomplete | Incomplete |

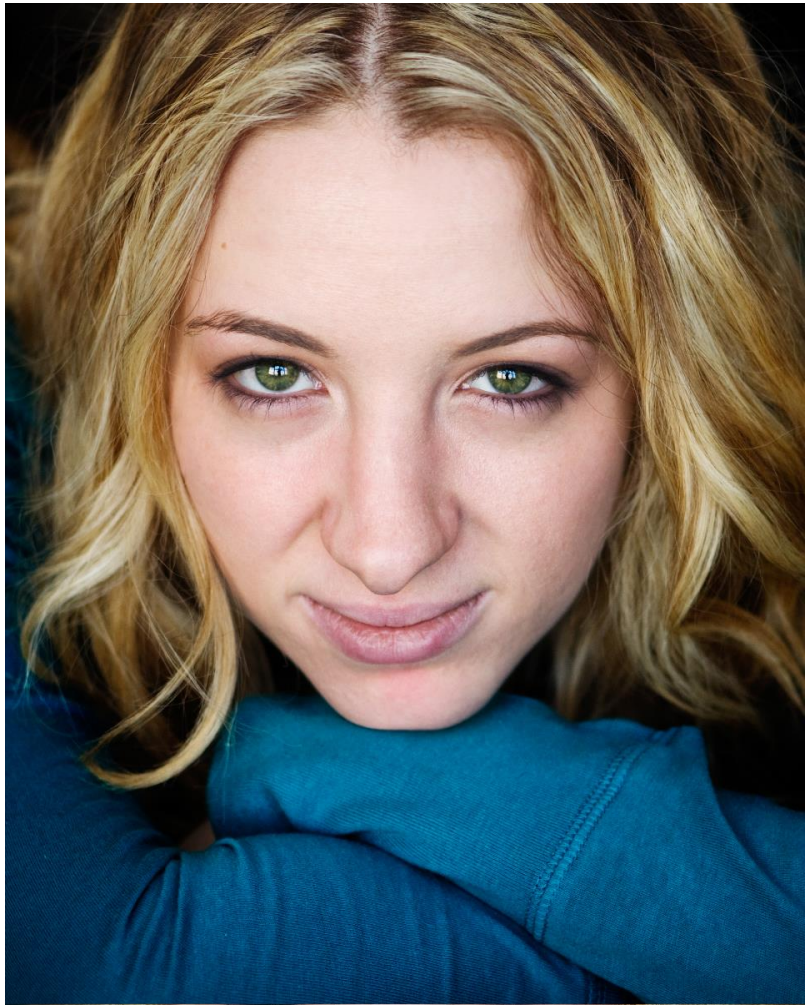
A University of Connecticut Research & Development Corporation Company

**What else matters?**

- **Interaction with advanced content**
- **Opportunities for continuous progress**
- **Differentiation of content and instruction**



- **SEM in the classroom, after school, within a full-time SEM School:**
- **Opportunities for continuous progress and differentiation and challenge**
- **Curriculum Compacting**
- **Renzulli Learning**
- **Creativity Training**
- **Future Problem Solving**
- **Project-based independent and small group studies each week**
- **Enrichment Clusters**
- **Classroom Enrichment Programs**




Enjoyment
Engagement
Enthusiasm


...AND NOW... THIS YEAR'S AWARD FOR "THE STUDENT VOTED BEST AT FILLING IN LITTLE CIRCLES WITH A NUMBER TWO PENCIL" GOES TO...
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