Newsletter
SYSTEMS

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Twenty-Two Years of Excellence

Serving the Needs of Highly and Profoundly Gifted Children: An Interview with Linda Silverman

by Suzanna E. Henshon, Ph.D.

Linda Kreger Silverman, Ph.D., is a licensed psychologist and director of the Gifted Child Development Center in Denver, Colorado. In addition, she directs the Institute for the Study of Advanced Development, and is editor of two journals: Advanced Development *and* Understanding Our Gifted. *She has published extensively in the field of gifted education;* Counseling the Gifted and Talented*, which she edited, was recently released. She began studying gifted children in 1958, and has experience as a resource teacher, teacher trainer, counselor, psychometrist, researcher, author and lecturer. She holds a Ph.D. in Special Education and Educational Psychology from the University of Southern California (USC), a masters degree in Special Education from USC, and a bachelors degree in Elementary Education from the State University of New York College of Education at Buffalo. For nine years, she served on the faculty of the University of Denver in counseling psychology and gifted education, and coordinated the gifted education graduate program.*

When and how did you become interested in highly/ exceptionally/profoundly gifted children?

I began studying the gifted when I was just 17 years old. I did a case study on an exceptionally gifted girl for a class I was taking. All through my undergraduate years at Buffalo State Teachers College, I wrote papers on the gifted every chance I had. For my geography class, I wrote a comparison of the education of the gifted in Great Britain and America. The instructor wrote on my paper, "This has nothing to do with geography, but it is an A paper." A year after I graduated, we moved to Los Angeles, where I immediately contacted Dr. John Gowan at California State University at Northridge and enrolled in the graduate program in Counseling and Guidance. As John was the leading expert in giftedness in California, this was as close as I could get to graduate study in the field that was clearly my calling. John hired me as a demonstration teacher in mathematics in his summer workshops for gifted children when I was only 21! I served in that capacity for 10 summers. The Gifted Children's Association of the San Fernando Valley (GCA) co-sponsored the workshops and I ended up designing Scholarship Preparation courses for them. After the first round of courses, I was so enamored of the teens that I created an ongoing weekly support group for gifted adolescents that lasted until they graduated high school. Most of the participants were highly, exceptionally and profoundly gifted. They shared their inner worlds with me and most of what I know about this group I learned during that intense five-year period.

How do you define "profoundly gifted"?

My use of terminology was developed in conjunction with an international group of experts, including Nancy Robinson and Miraca Gross. In 1999, John Wasserman was the project director on the *Stanford-Binet Intelligence Scale, Fifth Edition (SB5),* and he asked me

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to convene an internet discussion with leaders in this field to come to agreed-upon designations for different ranges of ability. After considerable discussion, consensus was achieved up to 175+ IQ, the 5th standard deviation above the mean. No agreement could be reached for 190 IQ or higher. John codified our consensus in 2003 in his chapter on "Assessment of Intellectual Functioning."

Levels of Giftedness

Level	IQ Range	Standard Deviations
Profoundly Gifted	above 175	+5 SD
Exceptionally Gifted	160 – 174	+4 SD
Highly Gifted	145-159	+3 SD
Gifted	130-144	+2 SD

(adapted from Wasserman, 2003, p. 435)

The ranges are based on standard deviations from the mean. We actually do see qualitative differences in the reasoning ability of children in these different ranges.

What do K-12 teachers and administrators need to know about these students? What would help them to identify profoundly gifted (PG) learners in their school?

It is important for teachers and administrators to realize that many children in the highest IQ ranges are not visible in school. For one thing, modern tests have low ceilings that squash the scores of extremely gifted children into the lowest range of giftedness. Kathi Kearney conducted a validation study of 25 profoundly gifted children on the SB5, whose scores ranged from 170 to 235+ on the The Stanford-Binet Intelligence Scale, Form L-M (SBL-M). Their mean score on the SB5 was 130. Similar studies have been done with the Wechsler scales and most scores for highly, exceptionally and profoundly gifted children were under 145.

A second factor is that school is not designed for children in these ranges, no more than it is designed for children 4 or 5 standard deviations below the mean (40 IQ and 25 IQ respectively), and provides no opportunities for them to demonstrate the full strength of their abilities. Stephanie Tolan [www.stephanietolan.com/is_it_a_cheetah.htm] reminds us that a caged cheetah does not run 70 miles per hour. Individual IQ testing with an experienced examiner is the only way to document the abilities of children who are at the top or bottom one percentile. For profoundly gifted children, a two-stage process is usually required, similar to the one employed in the Talent Searches. If the child scores above the 99th percentile in one or two subtests on a modern IQ test, it is permissible and appropriate to do out-of-level testing on a scale with a higher ceiling.

How do you think PG students can be best served in our schools? Can they be served by most school systems?

Highly, exceptionally and profoundly gifted children need to be able to learn at their own pace and at their own level. This requires flexibility on the part of the school system and willingness to accelerate the

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From the Editor

The focus of this issue of Systems Newsletter is serving highly/exceptionally/profoundly gifted learners, those students who score 3+ standard deviations above the mean on the Stanford Binet 5th edition. In an interview with Dr. Silverman, she clearly outlines steps schools should take to ensure services for these students. She also provides a reference list for parents and educators. Additionally in the newsletter, the new Executive Director, Dr. Tracy Cross, introduces himself and briefly states some of his future goals for the Center.

As always, we try to provide our readers with updates on our graduating students, changes in personnel, and any awards and recognitions our staff and students have received. Look for that further in the newsletter.

We hope to see you at the 15th National Curriculum Network Conference, March 10-12, 2010. The Call for proposal form is already online as well as the registration form.

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student as needed. The higher a child's IQ, the more quickly the child absorbs information. Often these children wait endlessly while their age-mates struggle to master concepts they learned before they entered the classroom. They need a diagnostic-prescriptive approach to learning. Teachers need to find out what they know before they teach them, so that they allow them to progress and do not end up re-teaching them what they have already mastered.

The higher the child's IQ, the more asynchronous the child is likely to be, so that abstract reasoning is far advanced over motor coordination. Highly gifted children need to be taught at the level of their conceptual reasoning, not their eye-hand coordination, which is usually age-appropriate. Speed of performance is not necessarily related to intelligence. They need advanced concepts in mathematics, not Mad Minutes. They do not learn through drill and repetition. They get it the first time. Drill and repetition should be avoided. They are conceptual learners, rather than skill learners.

Schools tend to focus on the mastery of skills rather than exploration of high level concepts, and are punitive to children who do not value skill learning. This mismatch is likely to drive an extremely gifted child out of school. Many have school refusal and insist that their parents homeschool them. If the school is not prepared to serve this population, then at least partial homeschooling should be considered so that the child is not forced into a crippling pattern of underachievement.

I believe that schools ***can*** serve children in the highest IQ ranges, but current school philosophies make this very difficult. Teaching to state achievement tests, bringing up the bottom of the class at the expense of the brightest, focusing on skills and speed, eliminating the arts, eschewing special classes and ability grouping in favor of more "egalitarian" approaches, cutting services to the gifted during difficult economic times, refusal to believe children exist who are that different, rigid standardization of curriculum, policies that prohibit acceleration, and the denial of the need for psychological testing in the schools, all prevent these children from being recognized and served.

There is one view that these students are best approached as thinking of them as twice exceptional learners. What is your thinking about this?

There is actually a connection between profound giftedness and twice exceptional learners. Both groups are highly asynchronous. In 60 years, I have never found a "well-rounded" exceptionally gifted child. Some seem that way because we are measuring 6-foot individuals with 5-foot rulers. If classroom and standardized tests had higher ceilings, we would see peaks and valleys at a very high level.

A profoundly gifted child may achieve at the 99th percentile in every subject, in every test, and still be very asynchronous, because the 99th percentile is only around 135. If this child were to be measured on tests with higher ceilings, the scores could range from 135 to 200 or higher, and 135 (99%) might be revealed as a "relative weakness" in comparison with his or her areas of brilliance.

For example, the child with the highest IQ score in the National Association for Gifted Children (NAGC) Task Force on Assessment Study achieved above the 99th percentile in nearly all subtests of the Woodcock-Johnson III Tests of Achievement (WJ-III) administered. She scored 19 points beyond the ceiling of 19 on Vocabulary on the WISC-IV, attaining a score of 28 on the extended norms; yet her Coding (eye-hand coordination and speed) score was only 7. This is a discrepancy of 21 points, **seven** standard deviations. If she had scored 10 in Coding, at the 50th percentile, there still would have been a discrepancy of **six** standard deviations between her reasoning ability and her motor coordination. Her IQ score on the SBL-M was 250+. At 8 years 4 months, she achieved a Mental Age of 20 years 11 months. There are huge discrepancies between her mental and physical capabilities.

Profoundly gifted and twice exceptional learners need psychological testing from a certified practitioner to be accurately identified and both groups fall through the cracks of a performance-based school system that no longer pays attention to discrepancies. Both groups need Individual Education Plans to be appropriately served.

What improvements in how PG learners are viewed or treated by schools have you seen over your career?

Unfortunately, in 6 decades, I have not seen improvement in how PG learners are viewed and treated by schools. However, in her studies, Karen Rogers found that small, rural districts were more likely than large, affluent, urban districts to take pride in their exceptionally and profoundly gifted children and to support them. They demonstrated greater flexibility in programming for these children and were more willing to implement the recommendations in psycho-educational reports.

Neglect of the brightest children (particularly apparent during the School Reform Movement) led colleges and universities to dramatically increase their services to pre-college-age gifted children, including Talent Searches, summer programs, early entrance programs and dual enrollment. And many new private schools for the gifted have been formed. Most PG children still fail to be recognized and served in schools, and their parents are dismissed unless they can provide documentation of their children's

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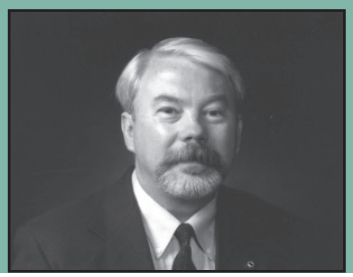
The Center for Gifted Education
427 Scotland Street
Williamsburg, VA 23185
Postal Address: Center for Gifted Education
The College of William and Mary
P.O. Box 8795
Williamsburg, VA 23187-8795
Phone: 757-221-2362; Fax: 757-221-2184
Web Address: www.cfge.wm.edu
email address: cfge@wm.edu
Executive Director: Dr. Tracy L. Cross
Systems Editor: Dawn Benson
Design/Layout/Technical Assistant: Sharron Gatling



Dr. Tracy L. Cross

Executive Director, Center for Gifted Education
Jody and Layton Smith Professor of Psychology and Gifted Education

Welcome to Systems, the newsletter of the Center for Gifted Education at The College of William and Mary. As you may have heard, Dr. Joyce VanTassel-Baska recently retired from The College of William and Mary after a phenomenally successful 20 plus years at the helm of the Center. From its creation to today Joyce has been tireless in her support and leadership of the Center. While its success is second to none, the success of the Center was merely a necessary vehicle for improving the world of students with gifts and talents and the educators who serve them. The Center also has helped parents, administrators and others as they work on behalf of these students. The Center has developed a unique expertise by emphasizing empirically validated curriculum materials for gifted students. That will not change. The Center's leadership in this area is unlike any other around the world, having improved the lives of teachers as well as their students. The reach of the Center is worldwide. Fortunately for all, Joyce is still sharing her expertise with the Center and will continue to expand her worldwide legacy.

As the person following in Joyce's role, let me introduce myself. My name is Tracy L. Cross, and I received my college degrees from the University of Tennessee. I have been fortunate to have many opportunities while working in university life such as holding the George and Frances Ball Distinguished Professorship of Psychology and Gifted Studies at Ball State University before I came to William and Mary. I have created and directed centers, research institutes, and a residential academy for gifted adolescents. I have received about $12,000,000 in grants, served the National Association for Gifted Children in a variety of roles, been on The Association for the Gifted (TAG) Board for many years, and edited seven journals, including my current assignment with the *Journal for the Education of the Gifted.*

I have provided counseling for gifted students, directed the testing of gifted students, and parented my own four gifted students. I have worked actively with state associations for the gifted, serving as president of the Wyoming Association for Gifted Education and the Indiana Association for the Gifted. I have published four books, 100 or more articles, dozens of columns, book chapters and the like. In essence, my life is about students with gifts and talents. I am honored to hold the endowed chair, Jody and Layton Smith Professor of Psychology and Gifted Education, and serve as the Executive Director of the Center for Gifted Education in the School of Education at The College of William and Mary.

One of the reasons I wanted to come to The College of William and Mary is the wonderful staff and faculty members who work on behalf of the Center for Gifted Education. Dawn Benson, and Drs. Lori Bland, Kim Chandler, Jennifer Cross, and Mihyeon Kim are outstanding. We also have three School of Education faculty members who work in significant ways with the Center: Drs. Bruce Bracken, Kyung Hee Kim, and Carol Tieso. Each of these professionals has contributed to our field immeasurably. I also want to note the assistance of the School of Education and particularly the Dean, Dr. Virginia McLaughlin, who has been supportive of the Center for two decades. You can see from my very brief description that the Center for Gifted Education at The College of William and Mary is a very special place. We continue to be committed to working on behalf of students with gifts and talents.

I encourage you to send us an email and let us know of your wishes and needs for the Center. We exist essentially as a service organization that provides research, training, professional development, curriculum materials, student assessment, and direct programming for students. Please peruse our Center website for details about our activities and personnel. Be a part of the Center of Gifted Education's next 20 years.📖📖📖

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abilities. After struggling with the lack of responsiveness of schools to their children's needs, many parents find that homeschooling is their only viable option.

What are some of the challenges of working with PG students?

One of the many challenges in working with profoundly gifted children is that they question everything. They are not purposely being disrespectful. This is a natural function of a complex mind. They need emotionally secure teachers who do not feel that they have to know more than their students. Recently, we tested a 6-year-old geography buff who corrected his teacher when she gave misinformation to the class. She put him in time out!

PG kids show precision in their thought processes, using such terms as "actually," "precisely" and "that depends..." from the time they are very young. Their minds go off on tangents that are more interesting to them that the material the teacher is presenting to the rest of the class. They may seem like "absent-minded professors," getting lost in a math problem and disappearing mentally. As Leta Hollingworth described them, they are "old heads on young shoulders," and they respond best when they are addressed at the level of their mental age rather than their chronological age.

What are some of the rewards?

The greatest immediate reward in working with PG kids is their sophisticated, and sometimes bizarre, sense of humor. Teachers of these children laugh a lot. But the long-term reward is in the relationship you establish with them that can last a lifetime. They see beyond the roles of teacher and student and want to know who you are as a person. If you are willing to share yourself with them at that level, they will become lifelong friends and enrich your life.

What advice would you give parents of profound/exceptionally gifted children?

Thankfully, today, parents of PG children no longer have to feel isolated. There are internet list-serves for these families. There are family gatherings, such as PG Retreat and the Davidson Young Scholars Program. "PG" is a term that is variously applied to highly, exceptionally and profoundly gifted children. It is important for parents of PG children to talk with other parents who are dealing with the same issues. Parents should read everything they can about these children in books and articles. They should visit websites such as www.hoagiesgifted.com and www.gifteddevelopment.com. They should find out exactly what they're dealing with—strengths and weaknesses, personality and learning style, and range of ability. Then they will know what to ask for in school, the resources available, which enrichment opportunities their child qualifies for, how to find them true peers, and how to respond to typical issues that arise. They need to know that scholarships are available, and be encouraged to inquire about financial assistance.

What advice would you give teachers of profound/exceptionally gifted students?

My advice to teachers is to open your hearts and think outside the box. The key to working effectively with a PG child is relationship. Ask them what they need. Advocate for them with other teachers. Help them problem-solve when they encounter difficult situations. Be flexible. Recognize that their needs may change dramatically every few months, so set up regular meetings with them. Listen to their parents. No one has spent as much time with them or knows them better than their parents. Create a coalition with the parents to create a comprehensive program that ameliorates their weaknesses and allows them to soar with their strengths.

Note: This interview was conducted in January of 2009 for *Systems*, published as an e-newsletter by The Center for Gifted Education at The College of William & Mary.

THE CENTER'S UPCOMING EVENTS

Focusing on the Future Career Conference
(January 23, 2010)

Saturday Enrichment Program
(February 13 - March 27, 2010)

National Curriculum Network Conference
(March 10-12, 2010)

Summer Institute
(June 28-30, 2010)

Summer Enrichment Program
(Session I - July 12-16, 2010)
(Session II - July 19-23, 2010)

Talented Collegians: An Explanatory Sequential Mixed Methods Study of the Talent Development Process in Gifted Undergraduate Students

by Angela Lycan

The purpose of this study was to gain a deeper understanding of talented students' perceptions of the means by which their college program and experiences have impacted their talent development in order to contribute to the body of literature on understanding talented collegians so that honors administrators, faculty and parents can better help to support students in their talent development journey. This study took place at a small, selective liberal arts college in the southeastern United States.

This study used Gagné's (1985, 2009) Differentiated Model of Giftedness and Talent (DMGT) as a lens in an explanatory sequential mixed methods design. Quantitative data was first collected through a survey instrument pertaining to gifted collegians' perceptions of the four main constructs of the DMGT, gifts, intrapersonal catalysts, environmental catalysts, and developmental process. These data were analyzed and used to select participants for the qualitative phase of the study, phenomenological interviews.

It was concluded gifted collegians are impacted by their gifts, such as intellectual, creative, and social gifts; intrapersonal catalysts, such as motivation and drive; environmental catalysts, such as peers, parents, professors; and the culture of the college and developmental process, such as coursework, research opportunities and extra-curricular activities. Further study is needed to generalize the findings to a broader audience and to investigate themes that emerged as significant for gifted collegians, such as the role of faith, the increased impact of peers and the decreased impact of parents, the role of student affairs and administration staff, and research opportunities and personal investment on the talent development process of gifted collegians. 🕮

A Study of the Talent Development of Gifted Individuals with Attention Deficit Hyperactivity Disorder

by Diann Gully, Alexandria City Public Schools

This qualitative study examined the effects giftedness and ADD/ADHD have on the talent development process of gifted individuals with ADD/ADHD. There is abundant research on the negative influences ADD/ADHD has on academic achievement and psycho-social functioning (Barkley, 1998); however, there is a dearth of research on gifted individuals with ADD/ADHD.

Talent development and gifted research have found both environmental catalysts, such as a supportive environment, and internal characteristics, such as an internal locus of control and persistence, as contributing to the development of talent (Bloom, 1982). These characteristics are the opposite of the characteristics of an individual with ADD/ADHD (i.e., external locus of control, lack of persistence; Brand, Dunn, & Greb, 2002). The effects of the confluence of these catalysts on the talent development for gifted individuals with ADD/ADHD are less known.

The participants of this study were one female and three male college graduates, ages 27-36 years old, from middle class families in diverse communities. All were identified gifted in elementary school, and two were diagnosed ADD/ADHD as children and two as adults. Data were collected through interviews with the participants and their parents, and assessments. Analysis was conducted through coding, pattern matching, display matrices, and descriptive analysis.

Findings revealed the following to be major influences in the talent development process for these individuals: (a) the symptoms of ADD/ADHD, (b) personal support, (c) quality of acceleration, and (d) internal coping mechanisms.

More research is needed to determine other factors that may affect talent development in this population and to generalize findings to the wider population. 🕮 🕮 🕮

What's Happening at the Center

Graduating this year from the Educational Policy, Planning, and Leadership doctoral program with a concentration in gifted education were: Diann Gully and Angela Lycan. Graduates of the Curriculum and Instruction master's program with a concentration in gifted education were Christina Pace and Kimberley Thoresen. We wish them all the best in their future endeavors.

It is always with mixed emotions that we share the news of the departure of any Center staff member. Sharron Gatling, formerly the Coordinator of PreCollegiate Learner Programs at the Center has taken another position at William and Mary as Assistant Director of Equal Opportunity. After 8-1/2 years of being an integral part of the Center, it is difficult to see beyond the void that is left with her departure as she had an unparalleled ability to interact with parents, teachers, and other external audiences. As everyone who has worked at the Center during Sharron's tenure can attest, she was always ready and willing to assist with Center initiatives. While we are happy to see her off to a new position that provide new challenges, and show that others recognize her abilities, the Center will miss her!

New Staff and Faculty

Dr. Jennifer Riedl Cross received her Ph.D. in educational psychology from Ball State University. Her area of specialization is cognitive and social processes, with an emphasis in gifted studies. She has presented at numerous conferences, from local to international, and published in a variety of peer-reviewed journals, including *Roeper Review, Journal of Youth and Adolescence,* and *Journal of Early Childhood Literacy*. Dr. Cross is experienced in both qualitative and quantitative approaches to research. Over the past two decades, she has served as assistant or managing editor for major research journals in the field of gifted education, including *Gifted Child Quarterly*, *Roeper Review*, and presently as managing editor for the *Journal for the Education of the Gifted*. Dr. Cross serves The College of William and Mary Center for Gifted Education as a postdoctoral research fellow.

Mihyeon Kim is the Center for Gifted Education's Coordinator of PreCollegiate Learner Programs. She recently received her Ed.D. in gifted education from The College of William and Mary. While earning her degree, she worked as a graduate assistant at the Center. Dr. Kim received the Joyce VanTassel-Baska Excellence in Gifted Education doctoral level award. She was on the development team of library services for virtual universities and distance programs in Korea and worked for the Learning Systems Institute at Florida State University for a year. Mihyeon also received a Ph.D. in library and informational studies from Florida State University.

New Graduate Assistants

We are pleased to welcome the following new graduate assistants at the Center.

Marnie Leadman is a first-year student in the Master of Education program in Community Counseling. She hails from Richmond, Virginia and received her Bachelor of Arts in Music and Spanish at Hollins University in Roanoke. After graduating, she worked at Virginia Commonwealth University as part of the grant staff for the Reynolds Partnership in Geriatric Education. Before coming to William and Mary, Marnie spent a year abroad in Spain teaching English and developing her Spanish language skills. Her most recent employment position was with a Spanish-owned engineering firm where she worked as a bilingual administrative assistant.

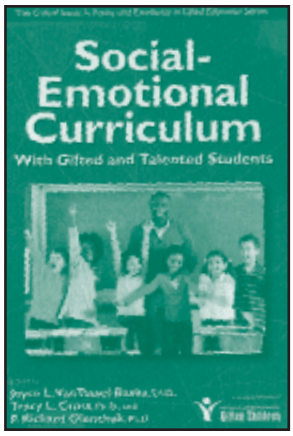
Jennifer Huebner is pursuing her M.A.Ed. degree in Curriculum and Instruction for Gifted Education. She received her B.A. from The College of William and Mary in May, 2009 with a double major in Psychology and Elementary Education. Prior to the fall semester of 2009, she was a 4th grade summer school teacher for five weeks in a Williamsburg public school. Upon completing her graduate program in May, 2010, Jennifer hopes to teach at the elementary level in Virginia, preferably in grades 3-5. She has worked with the coordinator of PreCollegiate Learner Programs at the Center this fall.

Kudos

It is always a pleasure to share any awards received by faculty as well as students in the gifted masters or doctoral programs.

Tracy Cross started his tenure with the College of William and Mary by receiving the *Mensa Education and Research Foundation's Lifetime Achievement* award for his contribution to the field of gifted education.

Valija C. Rose will be one of the doctoral students receiving the *NAGC Outstanding Doctoral Student* award this November at the NAGC national conference. Valija is now employed at the Center for Talented Youth at John's Hopkins University.



Social-Emotional Curriculum with Gifted and Talented Students, edited by Joyce VanTassel-Baska, Tracy L. Cross, and Richard Olenchack received the Texas Association for the Gifted and Talented 2009 Legacy Book Award. This volume contains chapters by leaders in the field such as Sydney Moon, Thomas Hébert, Joe Renzulli, and George Betts. The authors address a number of topics, including preventing suicide, arts curriculum, affective curriculum for diverse learners, developing secondary counseling programs, and professional development for promoting social emotional development. This book will serve as a useful resource for teachers, administrators, and anyone interested in seeking the best for our gifted and talented learners.

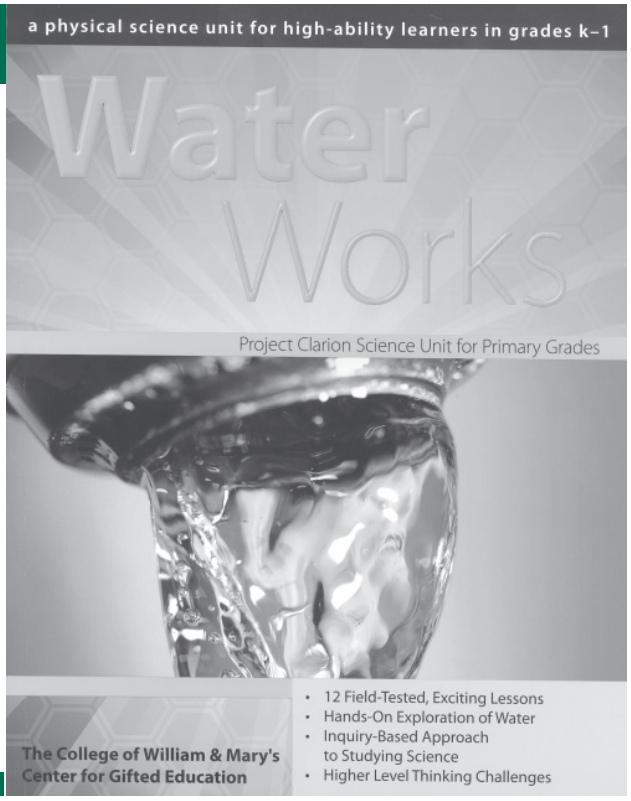
Award Winning Curriculum

At the National Association for Gifted Children's (NAGC) annual conference in November, the curriculum studies division will present an outstanding curriculum award to the Center for the science unit *Water Works.* This will be the 15th unit developed by the Center to receive this award.

Unit Description

Water Works is the 15th Center-developed unit to win a curriculum award from the NAGC curriculum division. The unit engages students in close observation and experimentation with water. The overarching concept of change is reinforced as students notice, react to, reflect on, and discover more about force and change. Students ask questions and design experiments to reinforce their learning. Generalizations about how things change are developed through students' analysis of their findings. Students explore the characteristics of water, discover whether objects sink or float, experiment to make things float, and examine materials and their interactions with water.

This unit can be ordered by calling the Center for Gifted Education at (757) 221-2362 or visit the website: www.cfge.wm.edu



Professional Development in Science: Project Clarion

by Lori Bland, Ph.D.

Project Clarion, a five year curriculum scale-up Javits project, was initiated by the Center for Gifted Education at the College of William and Mary during the 2004-2005 academic year and is in its fifth and final year of implementation (VanTassel-Baska & Bracken, 2004). *Project Clarion's* focus was to create, test, and disseminate science curriculum units for K-3 learners that cultivate scientific habits of mind; develop conceptual understanding; build scientific inquiry, reasoning, and investigative skills; and foster science content attainment. Of note, *Budding Botanist* received a 2008 NAGC Curriculum Award and *Water Works* received the 2009 NAGC Curriculum Award. *Water Works* and *What's the Matter* received an excellent review from the National Science Teachers' Association in 2009 stating, "If you are looking for engaging, hands-on investigations for primary grades, this is a wonderful resource." Table 1 shows the available Clarion units.

Table 1. Project Clarion K-3 Science Units.

Science Domain	Grade(s)	Unit	Macro-Concept
Life	K-1	Survive and Thrive	Change
	1-2	Budding Botanist*	Systems
Earth	K-1	How the Sun Makes Our Day	Change
	2	Weather Reporter	Change
	3	Dig It!	Change
Physical	K-1	Water Works**	Change
	2-3	What's the Matter?	Change
	3	Invitation to Invent	Systems

*Winner of the 2008 NAGC Curriculum Award
**Winner of the 2009 NAGC Curriculum Award

Go to www.cfge.wm.edu or www.prufrock.com to purchase the Clarion units.

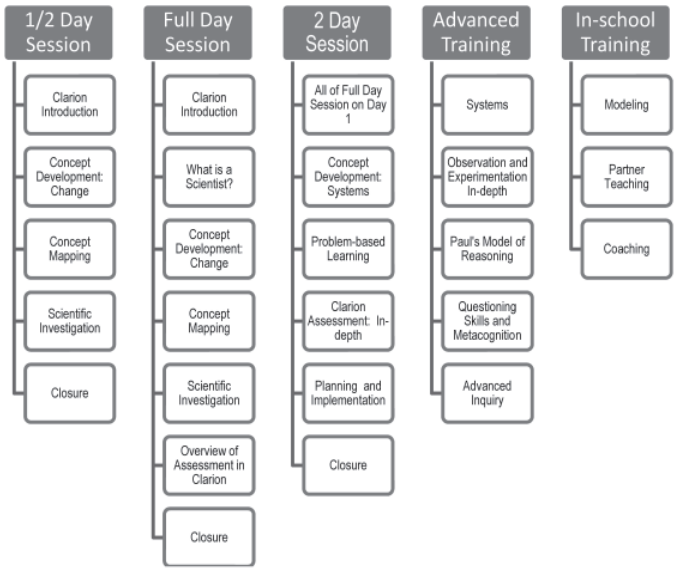
The Clarion Professional Development Model. Current dissemination includes providing professional development (PD) for school districts that implement the units. A training model was developed for Project Clarion which includes the following components:

- providing teachers and administrators with information about the unit
- practice with the teaching strategies
- planning
- modeling of strategies with students
- observing teacher implementation of strategies and coaching
- reflection
- advanced training for teachers who have implemented the model

The Clarion Audience. Clarion professional development has been provided to multiple school across the country. Participants have included teachers of students in gifted programs, general education teachers, science teachers, science coordinators, gifted education coordinators, and school-based administrators.

Clarion Topic Modules. Individual modules were developed to help teachers "unpack" and successfully implement Clarion units. Each module provides information about research-based best practice, a description of the teaching strategy, modeling the strategy with teachers, practice with the strategy, and teacher reflections. William and Mary faculty and staff will come to your school district or school to provide hands-on training on one or more topic modules. Advanced training is also available for school districts that have begun implementation of Clarion. Table 2 shows suggested groupings for modules in half-day, full day, and two day sessions. Advanced sessions can be selected for ½ day or full day sessions. In-class modeling, partner teaching, and coaching, are also available with individual teachers, as requested. We can also customize professional development. Table 3 describes each PD Module.

Table 2. Suggested Module Sessions.



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Professional Development

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Table 3. Topics Discussed in Each Clarion Professional Development Module.

Module	Content
Clarion Introduction	• Overview of Clarion • What is a Clarion Unit? Hands-on Unit Review • Summary of Clarion Research Results • Why Clarion Works
What is a Scientist?	• Clarion Teaching Model: The Frayer Model of Vocabulary Development • Using the Vocabulary Development Model • Review of Lesson on "What is a Scientist?"
Concept Development: Change	• Developing Concepts in Students • Macro-Concepts • Clarion Teaching Model: Taba's Model of Concept Formation • Macro-concept of "Change" • Review of Macro-Concept Lessons in Units
Concept Mapping	• Content attainment • Clarion Teaching Model: Concept mapping • Concept Mapping Practice • Mapping Unit Content • Review of Science Content in Units
Scientific Investigation	• Clarion Teaching Model: Wheel of Scientific Investigation • Making and Recording Observations • Conducting an Experiment • Review of Experiments in Units
Overview of Assessment in Clarion	• Clarion Unit Pre/Post Performance-Based Assessments on: o Macro-concept o Key Science Concepts o Scientific Investigation
Concept Development: Systems	• Developing Concepts in Students • Macro-Concepts • Clarion Teaching Model: Taba's Model of Concept Formation • Macro-concept of "Systems" • Review of Macro-Concept Lessons in Units
Problem-based Learning	• Clarion Teaching Model: Problem-Based Learning • Need to Know Board • Review of Problem-Based Scenarios in Units
Clarion Assessment: In-depth	• Teacher Practice with Clarion Unit Pre/Post Performance-Based Assessments on: o Macro-concept o Key Science Concepts o Scientific Investigation • Rubric Review • Pre- and Post-exemplars • Review of Assessment "Look Fors" in Unit Lessons
Planning and Implementation	• Extensive Unit Review • Review of Materials Lists • Materials Management Strategies • Strategies for Grouping Arrangements • Implementation Tips
Systems	• Advanced Exploration of Systems in Clarion Units • Exploration of Budding Botanist and Invitation to Invent • Macro-concepts as Interdisciplinary Connections

Professional Development

(Cont'd from page 10)

Advanced Observation and Experimentation	• Conducting Observations and Recording Data • Asking Scientific Questions • Moving From Questions to Hypothesis • How to Plan and Develop a Fair Test of a Hypothesis • Experimental Reporting • Using Clarion Organizers
Paul's Model of Reasoning	• Components of Reasoning Model • Reasoning Model Scenario • Practice with the Model
Questioning Strategies and Metacognition	• Clarion Questioning Strategies: o Problem-based o Inquiry-based o Metacognition • Examples of Question Types in Unit
Customized Professional Development	• Developed as requested

Clarion Works: Research Highlights. By the end of the fourth year of implementation 3,462 student100s had participated in one or more years of Clarion in over 40 heterogeneous classrooms at six Title I schools in rural, suburban, and exurban school districts. Research highlights include:

- Clarion produces positive gains in critical thinking, conceptual understanding, science content attainment, and scientific investigation.
- More Clarion is better. When students begin receiving instruction on the Clarion units in Kindergarten and first grade, they do better on standardized measures of science content than students who have had little or no experience with the units.
- Clarion acts as an equalizer. Traditionally underserved and underidentified students in science perform well on science achievement measures after receiving instruction on Clarion units.
- Clarion is a "gestalt." Students learn science from Clarion because the units use macro-concepts (like change and systems), problem-based learning, and the scientific investigative process to help students construct and organize their understandings of science concepts.

Effective implementation takes time. Teachers who were novices in using the Clarion strategies needed professional development, modeling, coaching, and practice to successfully and fully implement Project Clarion. Teachers also needed administrative support in the form of common planning time, materials, and permission to practice. When done well, Clarion units spark an excitement for science that may potentially last a lifetime.

Suggested Resources for Supporting the Highly Gifted

Books

Colangelo, N., Assouline, S.G., & Gross, M. U. M. (2004). *A nation deceived: How schools hold back America's brightest students. Vol. 1.* Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.

Davidson, J., Davidson, B., & Vanderkam, L. (2005). *Genius denied: How to stop wasting our brightest young minds.* New York: Simon & Schuster.

Gilman, B. J. (2008). *Academic advocacy for gifted children: A parents' complete guide.* Scottsdale, AZ: Great Potential Press.

Gilman, B. J. (2008). *Challenging highly gifted learners*. Waco, TX: Prufrock Press.

Gross, M. U. M. (2004). *Exceptionally gifted children* (2nd ed.). London: Routledge Falmer.

Hollingworth, L. S. (1942). *Children above 180 IQ Stanford-Binet: Origin and development*. Yonkers-on-Hudson, NY: World Book Company.

Kay, K., Robson, D. & Brenneman, J. F. (Eds.). (2007). *High IQ kids: Collected insights, information, and personal stories from the experts.* Minneapolis, MN: Free Spirit.

Lovecky, D.V. (2004). *Different minds: Gifted children with AD/HD, Asperger Syndrome, and other learning deficits*. London: Jessica Kingsley.

Piechowski, M. M. (2006). "*Mellow out," they say. If only I could: Intensities and sensitivities of the young and bright*. Madison, WI: Yunasa Books.

Rivero, L. (2002). *Creative homeschooling for gifted children: A resource guide*. Scottsdale, AZ: Great Potential Press.

Rogers, K. (2002). *Re-forming gifted education: How parents and teachers can match the program to the child*. Scottsdale, AZ: Great Potential Press.

Continued on page 12, Suggested Resources

Join us at the
15th Annual National Curriculum Network Conference
March 10-12, 2010
Held at the College of William and Mary in Williamsburg, Virginia

Keynote Speakers

Dr. Susan Johnsen, Baylor University and Dr. Carol Tieso, The College of William and Mary.

Featured Speakers

Dr. Tracy L. Cross, The College of William and Mary, and Dr. Kyung Hee Kim, The College of William and Mary.

The Call for Proposal and Registration forms are available at www.cfge.wm.edu/professional_ncnc.php.

Suggested Resources

(Cont'd from page 11)

Ruf, D. L. (2005). *Losing our minds: Gifted children left behind* Scottsdale, AZ: Great Potential Press.

Silverman, L. K. (1989). The highly gifted. In J. Feldhusen, J. VanTassel-Baska, & K. R. Seeley (Eds.). *Excellence in educating the gifted* (pp. 71-83). Denver: Love.

Silverman, L. K. (1995). Highly gifted children. In J. Genshaft, M. Bireley, & C. L. Hollinger (Eds.), *Serving gifted and talented students: A resource for school personnel (*pp. 217-240). Austin, TX: Pro-Ed.

Articles and Chapters

Feldhusen, J. F., Proctor, T. B., & Black, K. N. (2002). Guidelines for grade advancement of precocious children. *Roeper Review, 24,* 169-171.

Gross, M.U.M., & van Vliet, H.E. (2005). Radical acceleration and early entry to college: A review of the research. Gifted Child Quarterly, 49, 154–171.

Lovecky, D. V. (1994). Exceptionally gifted children: Different minds. *Roeper Review, 17,* 116-120.

Rimm, S., Gilman, B. J., & Silverman, L. K. (2008). Non-traditional applications of traditional testing. In J. VanTassel-Baska (Ed.), *Critical issues in equity and excellence in gifted education series, Volume 2: Alternative assessment of gifted learners* (pp. 175-202). Waco, TX: Prufrock Press.

Rogers, K. B. (2002). Effects of acceleration on gifted learners. In M. Neihart, S. M. Reis, N. M. Robinson, & S. M. Moon (Eds.), *The social and emotional development of gifted children* (pp. 3-12). Waco, TX: Prufrock Press.

Teasdale, T. W., & Owen. D. R. (2005). A long-term rise and recent decline in intelligence test performance: The Flynn Effect in reverse. *Personality and Individual Differences, 39,* 837 – 843.

Sheely, A., & Silverman, L. K. (2007). Defining the few: What educators and parents need to know about exceptionally and profoundly gifted children. In K. Kay, D. Robson, & J. F. Brenneman (Eds.), *High IQ kids: A manual for adults who care* (pp. 6-14). Minneapolis, MN: Free Spirit.

Silverman, L. K. (2008, Spring). How to use the new IQ tests in selecting gifted students. *IAGC/AOT Newsletter* (Dublin, Ireland), pp. 13-19. http://www.gifteddevelopment.com/About_GDC/newiqtests.htm

Silverman, L. K. (in press). The measurement of giftedness. In L. Shavinina (Ed.), *The International Handbook on Giftedness. Amsterdam: Springer Science*.

Wasserman, J. (2007). Intellectual assessment of exceptionally and profoundly gifted children. In K. Kay, D. Robson, & J. F. Brenneman (Eds.), *High IQ kids: A manual for adults who care* (pp. 48-65). Minneapolis, MN: Free Spirit.

Informational Websites

http://www.hoagiesgifted.org This comprehensive website provides information for teachers, parents, and students on all levels of giftedness, ranging from a huge reference library of articles, information about scheduled conferences, and recommended books, to nerd shirts.

http://www.stephanietolan.com/nonfiction.htm Stephanie Tolan's website contains information for parents about children at the upper extremes of intelligence, as well as descriptions of her books, nearly all of which have exceptionally gifted protagonists.

http://www.gifteddevelopment.com The source for information on assessment of the highly gifted, this website also offers a library of articles on the highly gifted, addresses advocacy, gifted children with deficits, and offers support services to parents of highly, exceptionally and profoundly gifted children.

http://www.nationdecieved.org/ This is the comprehensive source for information on acceleration.

http://www.ditd.org/ This website describes the offerings of the Davidson Institute for Talent Development, including the GT-CyberSource library.

*From Gilman, B. J. (2008). Challenging highly gifted learners. Waco, TX: Prufrock Press.