Board of Education Agenda Item

Item: L. **Date:** July 23, 2009

Topic: First Review of the Proposal to Establish The Governor's School @ Innovation Park (GS@IP) Serving Students from Manassas City, Manassas Park City, and Prince William County Public School Divisions

Presenters: Dr. Felicia D. Dyke, Director, Office of Middle and High School Instruction
Dr. Gail E. Pope, Superintendent, Manassas City Public Schools
Dr. Thomas H. DeBolt, Superintendent, Manassas Park City Public Schools
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Origin:

____ Topic presented for information only (no board action required)

_X_ Board review required by
- _X_ State or federal law or regulation
- ____ Board of Education regulation
- ____ Other: _____

_X_ Action requested at this meeting ____ Action requested at future meeting: _____ (date)

Previous Review/Action:

_X_ No previous board review/action

____ Previous review/action
date _____
action _____

Background Information:
In 2007, a planning group representing the school divisions of Manassas City, Manassas Park City, and Prince William County began formal study for the establishment of an Academic-Year Governor's School for gifted high school students. Within several months of the establishment of the planning committee, George Mason University became a partner in the endeavor.

In 2008, the General Assembly awarded $100,000 to Prince William County Public Schools, fiscal agent for the partnership, to begin the process of planning the program, identifying the location, and developing operational procedures for a new Governor's School. The three school divisions, along with George Mason University, have conducted a variety of studies to determine the focus, curriculum and instruction, grades, and location for a proposed Academic-Year Governor's School for the region's gifted high school students.

Summary of Major Elements:
The proposal documents the existence of an active Governing Board, the designation of a fiscal agent, the overall mission, goals and objectives, the proposed program administration, the proposed student selection criteria, and a proposed site location for The Governor's School @ Innovation Park. The document provides detailed descriptions of the program's curricular focus on environmentally-based sciences and advanced mathematics, augmented by an extensive concentration on 21st Century skills, Earth, relevant engineering practices, technology, and original research skills.

The proposal offers letters of support from business/industry, higher education, and community leaders for the program and its vision and mission.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education waive first review and approve the proposal thus enabling the Governing Board to proceed to the 2010 General Assembly for operational funding.

Impact on Resources:
The staff at the Department of Education has reviewed the GS@IP proposal. The Department of Education distributes general funds allocated by the General Assembly to Academic-Year Governor's Schools' fiscal agents based on the individual programs' September 30th membership. Additional operating funds would need to be included in the Governor's budget in December 2009 and in the Appropriation Act for the 2010-2012 biennium. Given current funding formulas and an estimated 60 to 75 students attending from Prince William County, the approximate state funding for this program could range from $156,200 to $187,350.

Timetable for Further Review/Action:
The Governing Board of The Governor's School @ Innovation Park respectfully requests that the Virginia Board of Education expedite the processing of this request to support budget preparations by the Virginia Department of Education and the Governor for FY2011. The Governing Board is working with its legislative delegation to seek operational funds from the 2010 General Assembly in order that the program might open in September 2010. Once the funding is included in the Governor's budget, the Governing Board will need to work with the General Assembly to ensure that the funding is retained in the adopted budget.

Procedures for Initiating an Academic-Year Governor's School
Proposal Review

Name: The Governor's School @ Innovation Park

Location: Manassas City, Manassas Park City, and Prince William County Public Schools

Date of Review: June 2, 2009

REVIEW OF THE PROPOSAL

School divisions desiring to implement an Academic-Year Governor's School shall provide the Department of Education with documentation of the following:

I. The existence of an active, ongoing Governing Board of superintendents or their designees from the participating school divisions. **Page 6**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

a. The board shall include school board members and parents. **Page 6**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

b. The Governing Board shall design and administer the Governor's School program which is beyond the scope and sequence of the regular school program for gifted students. **Sections IV and V**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

c. Said Governing Board shall determine:

1. the initial location and **Pages 4 and 36**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

2. fiscal agent that is the school division in which the Governor's School is located. **Pages 7 and 37**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

II. A statement which demonstrates the need/rationale for the school. This statement should be concise and state the important reasons to have a Governor's School, separate and unique from the existing program offerings for secondary gifted students. **Page 1**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

> **a.** A statement of assurance that all school divisions in the region have been invited to participate. **Page 2**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

> **b.** A statement of assurance that all participating school divisions support the program for a minimum of three years. **Page 41**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

III. A brief description of the proposed program:

> **a.** site location - A statement of assurance that site location(s) meets program requirements. **Section II and page 36**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

> **b.** number of students **Page 40**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

> **c.** grade levels **Pages 13 and 40**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

d. general curriculum design. **Section V**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

e. recommended classification. **Page 42**

Half-day (.5) √ **5/6-day (.8333)** Full-day (1.0)

IV. A written memorandum of agreement with local businesses, industries, and institutions of higher learning. This agreement will suggest ways in which community resources will contribute to the Governor's School to broaden the scope of the students' educational experiences. **Appendix V**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

V. A statement of assurances that the Governing Board has reviewed provisions for the Administrative Procedures Guide for the Establishment of Academic Year Governor's Schools and agrees to follow the guidelines set forth in the document. **Page 6**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

VI. A statement of assurance that an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs. **Page 7**

√ **Full Documentation** ___Partial Documentation ___No Documentation

Citation:

Review of Documentation

The plan submitted by the three school divisions seeking to establish The Governor's School @ Innovation Park is detailed and offers strong evidence for the need for the program. The proposal provides detailed information about the advanced curriculum, the structure of the school day/week, and the screening, selection, and orientation of students. The Governing Board, planning committee, superintendents' executive committee, and community involvement portions of the document are well-structured, with evidence that the Governing Board will approve policies required under *Code of Virginia* §22.1-26. Joint Schools.

The Governor's School @ Innovation Park

A Proposal for the Establishment of

An Academic-Year Governor's School
Serving Manassas City, Manassas Park City, and
Prince William County Public Schools

Anticipated Opening September 2010

As approved by the
Manassas City, Manassas Park City, and
Prince William County
School Boards

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Prince William Campus

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Executive Officer
Jeff Gorrell
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I. Introduction

Statement of Need and Interest

The Northern Virginia region has a respected history of innovation and leadership in educational opportunities for its students. The three school divisions of Manassas City (MCPS), Manassas Park City (MPCS), and Prince William County (PWCS) have continuously espoused the need to expand opportunities for their strongest students in mathematics and science. When a Prince William County School Board member, Dr. Michael Otaigbe voiced his concern in February 2007 that students' abilities in these areas were not adequately served, his interest galvanized similar apprehension in educators in Manassas City and Manassas Park City.

Prince William County Public Schools has participated in the Thomas Jefferson High School for Science and Technology (TJHSST) program since its designation as the first Academic-Year Governor's School in the mid 1980s. However, Northern Virginia educational and employment opportunities and expectations, as well as transportation realities have changed immensely in the last 20 years. TJHSST continues to draw many PWCS students, but its numbers have declined, often as travel time has increased.

Since MCPS and MPCS did not participate in the full-day program at TJHSST, administrators from those divisions also recognized that additional opportunities in the areas of mathematics and science were needed. All three school divisions have taken part in the many national efforts to increase student achievement in K-12 science, technology, engineering, and mathematics (STEM). In response to this regional interest, the Superintendents of Manassas City, Manassas Park City and Prince William County met and agreed to explore a partial day science, technology, engineering, and mathematics (STEM) program. All three division administrators recognize that such a shared-time model offered their students the best of two communities, a community of learners where accelerated, college-level coursework designed to match their abilities and needs was balanced with their community of friends, academics, and extracurricular activities and athletics at their base high schools.

The STEM initiative with its emphasis on design and problem solving was seen as a natural vehicle to incorporate and test existing knowledge from many disciplines into new knowledge and experiences they would acquire through original research. Such "intellectually messy" problems would encourage students to function as engineers to use technology to gather and analyze data, design, test, and improve a proposed solution, and then communicate their findings to their peers.

Additionally, the division administrators recognized the opportunity this expansion offered to incorporate other significant advancements into their systems. Manassas City Public Schools had adopted tenets of the Partnership for 21st Century Schools into its program K – 12 under the leadership of Superintendent Gail Pope. Throughout the MCPS curriculum and instruction teachers and administrators were challenged to expand students use of those skills considered essential in the modern world:

- Learning and innovation skills - creativity and innovation, critical thinking, problem solving, communication and collaboration;
- Information, media, and technology skills - information literacy, media literacy, ICT (information, communications and technology) literacy; and
- Life and career skills - flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility.

An overarching concern expressed by all administrators and school board members focused on the economic opportunities available in the Manassas

City, Manassas Park City, and Prince William County region. Through collaboration with the many technologically innovative corporations located in the region, students would be able to employ their knowledge and skills while working side-by-side with engineers, designers, physicists, technicians and others on the front line of inquiry. Companies such as Lockheed Martin, BAE Systems, Aurora Flight Sciences Corporation, Georator Corporation, Northrup Grumman, and Micron have opened their doors to students and teachers to encourage the growth of student achievement and learning.

The continued growth of this region is predicated on the strength of its work force to think critically and creatively. The authors of *Understanding University Success* (Conley, 2003), a project of the Association of American Universities and the Pew Charitable Trusts, concluded that such skills may in fact be more important than specific content knowledge.

> The habits of mind include critical thinking, analytic thinking and problem solving… and an ability and desire to cope with frustrating and ambiguous learning tasks. Other critical skills include…to discern the relative importance and credibility of various sources of information; to draw inferences and reach conclusions independently; and to use technology as a tool to assist the learning process rather than as a crutch. It is not enough simply to know something; the learner must possess the ability to do something with that knowledge, whether it is to solve a problem, reach a conclusion, or present a point of view.

The need to provide more opportunity for advanced exploration of science, technology, engineering, and mathematics; the need to incorporate 21st Century Skills into the curriculum; the desire to incorporate the rich economic opportunities of the region; and the importance of building habits of mind in their students prompted the three divisions' administrators to move forward with the planning of the 19th Academic-Year Governor's School to serve Manassas City, Manassas Park City, and Prince William County.

Initial Steps

An interest in a shared-time, regional Academic-Year Governor's School came from a Prince William County School Board member in February 2007. In response to the interest, the Superintendents of Manassas City, Manassas Park and Prince William County met and agreed to explore a partial day STEM program. School division designees were appointed to begin the process in April 2007. In June 2007, the superintendents' designees met with Dr. Barbara McGonagill, then principal specialist for Gifted and Governor's Schools at the Virginia Department of Education.

In summer 2007, the service region for the proposed Academic-Year Governor's School was defined as the Prince William County area including the three school divisions found within the county. At that time, all three school divisions made commitments to participate in the development of the program.

The Governor's School @ Innovation Park (GS@IP) Planning Committee was established in July 2007. George Mason University agreed to become a partner in August 2007. With the planning committee and a university partner in place, an application for a planning grant was approved by the Manassas City, Manassas Park City, and Prince William County School Boards in November 2007. The Virginia General Assembly

> "Each year approximately 200 Prince William County students applied for admission to Thomas Jefferson High School and each year only about 20 were usually admitted. I was always wondering whatever happened to the 180 students who could not get in. They were equally motivated and smart. Whatever happened to their dreams and hopes of becoming scientists and engineers? The Governor's School @ Innovation Park will provide a place for these students to be challenged and begin the process of realizing their career goals."
>
> Dr. Michael Otaigbe
> School Board Chairman
> Prince William County Public Schools

approved the planning grant in April 2008. A request for an extension of the planning grant into the second year of the biennium was made in January 2009. (See Appendix A.) To facilitate the planning process, a consultant was hired in August 2008. (See Appendix B.)

A master time line was established by the planning committee to direct the proposal process. Initial research included visits to two existing Governor's Schools (GS) in February 2008. The planning committee visited Central Virginia GS in Lynchburg and Roanoke Valley GS in Roanoke City. On April 30, 2008, a panel of teachers, students, and the director of Mountain Vista Governor's School answered questions and offered perspectives to the committee at one planning committee meeting. At the October 14, 2008 meeting, a panel discussion with two Governor's School directors from New Horizons and Chesapeake Bay Governor's Schools was conducted. At that meeting former New Horizons director and current principal specialist for Gifted and Governor's Schools for the Virginia Department of Education, Dr. Donna Poland, provided additional information about the planning and operations processes. The visitations and panel discussion helped the planning committee envision how the GS@IP would be organized and operate. (See

Localities and Their Services

Prince William County includes three school divisions: Manassas City Public Schools, Manassas Park City Public Schools, and Prince William County Public Schools. The biggest challenge faced by the planning committee was to design a program that would provide unique experiences for all students who attend the GS@IP.

Manassas City has a student enrollment of approximately 6,200. The *Children's Engineering Initiative* is available for students in kindergarten through grade 8 as well as a gifted and talented program, K-12. While high school students who are identified as gifted have Advanced Placement (AP) or dual enrollment courses from which to select, there is limited, if any, integration across content areas. Opportunities for mentorships/internships are available informally through Career and Technical Education programs.

Manassas Park has a student enrollment of approximately 2,300. While high school students who are identified as gifted have Advanced Placement or dual enrollment courses from which to select, there is limited, if any, integration across content areas.

Manassas Park High School does offer a community service course. The intent of the course is to increase students' communication and team building skills.

Prince William County Public Schools (PWCS) has a student enrollment of approximately 73,000. Gifted Education Services are offered at all schools from kindergarten through grade twelve. In addition to gifted services, each of the ten high schools has a specialty program. These specialty programs include the following: Center for Information Technology; the Cambridge Programme; International Baccalaureate Programme; the Center for Environmental and Natural Sciences; the Biotechnology Center; the Center for International Studies and Languages; and the Center for Fine and Performing Arts. A wide variety of programs is also offered through Career and Technical Education. Air Force, Army, and Navy JROTC programs are available. All programs require an application and a possible change in high school for the selected students. PWCS students have participated in the Thomas Jefferson High School for Science and Technology (TJHSST) in Fairfax County since its inception. Fewer students have chosen to attend TJHSST since the development of the specialty programs in Prince William County Public Schools.

II. Site Location and University Partner

George Mason University Prince William Campus (GMU-PWC) has been designated by the George Mason Board of Visitors as the primary campus for the biological and life science research being conducted at Mason. In addition to the current wet laboratory space located in the three academic buildings, Occoquan, Discovery, and Bull Run Halls, the University is currently building a new 52,000 sq. ft., state-of-the-art, biomedical research laboratory (BRL), in cooperation with the National Institute of Health. Scheduled for completion in the spring of 2010, this facility will be home to several of the research efforts currently underway on campus as well as new research endeavors.

By relocating several research activities currently housed in existing labs to the BRL, Mason will have the ability to increase the number of academic/teaching laboratories, and thus expand the life science academic offerings on campus for undergraduate and graduate students. This project will also provide much needed wet laboratory space for the addition of the medical education program scheduled to begin on the Prince William Campus in fall 2010.

The College of Science is committed to building additional wet laboratory space to further expand their research programs beyond 2010. This newly planned facility is also intended to house a biotechnology (biotech) incubator facility, operated by the Mason Enterprise Center. The Mason Enterprise Center will assist emerging biotech companies as they develop and mature. With the addition of the new leased laboratory facilities, Mason plans to attract new researchers and research projects, as well as new biotech companies wanting to partner with Mason in its research efforts.

Finally, the GMU-PWC provides direct support for Mason's environmental science and life sciences research at both the Smithsonian's Conservation Research Center (CRC) in Front Royal, and Mason's Potomac Environmental Research and Education Center in Belmont Bay. Both of these centers are directly involved in environmental and conservation science research and education. Future plans call for establishing an interactive exhibit center on the Prince William Campus to showcase the research being done at both of these auxiliary sites.

The University is conveniently located in Innovation Technology Park, a 1,500-acre business and technology park targeting biotechnology, life science, and supporting industries. Anchored by George Mason University's life science campus, Innovation Technology Park has grown, since

Bull Run Hall Classroom

Occoquan Hall

opening in 1997, to become home to biotech industry leaders. This unique public-private partnership has evolved into a "university-centered" model for economic development within Prince William County. This innovative model was recognized by CoreNet Global, the world's leading professional association for corporate real estate and workplace executives serving leading multinational companies, with their top economic development leadership award in 2006. This award was jointly accepted on behalf of the George Mason University and the Prince William County Economic Development office for their continued partnership for future growth in Innovation.

During a recent speech, former Virginia Secretary of Technology, Aneesh P. Chopra said, "A key component of innovation is the presence of a four-year research institution. George Mason University's life sciences campus in Prince William and the research development projects around it are absolutely the cornerstones and foundation of the vibrant and innovative community there."

As specified more fully in the administrative aspects of this proposal, GMU-PWC will provide office space for the faculty and staff of the GS@IP. Classroom space and adequate laboratory facilities will be made available for the Academic-Year Governor's School staff and students. The proximity of the University to community resources for mentorships and internships makes it an optimal site to meet the goals of the proposed program. The GS@IP will be the only Governor's School housed as a single site on a major four-year university; this location will increase the program's capacity to shape a community of learners among its students that includes major researchers in related fields as mentors, colleagues, and instructors.

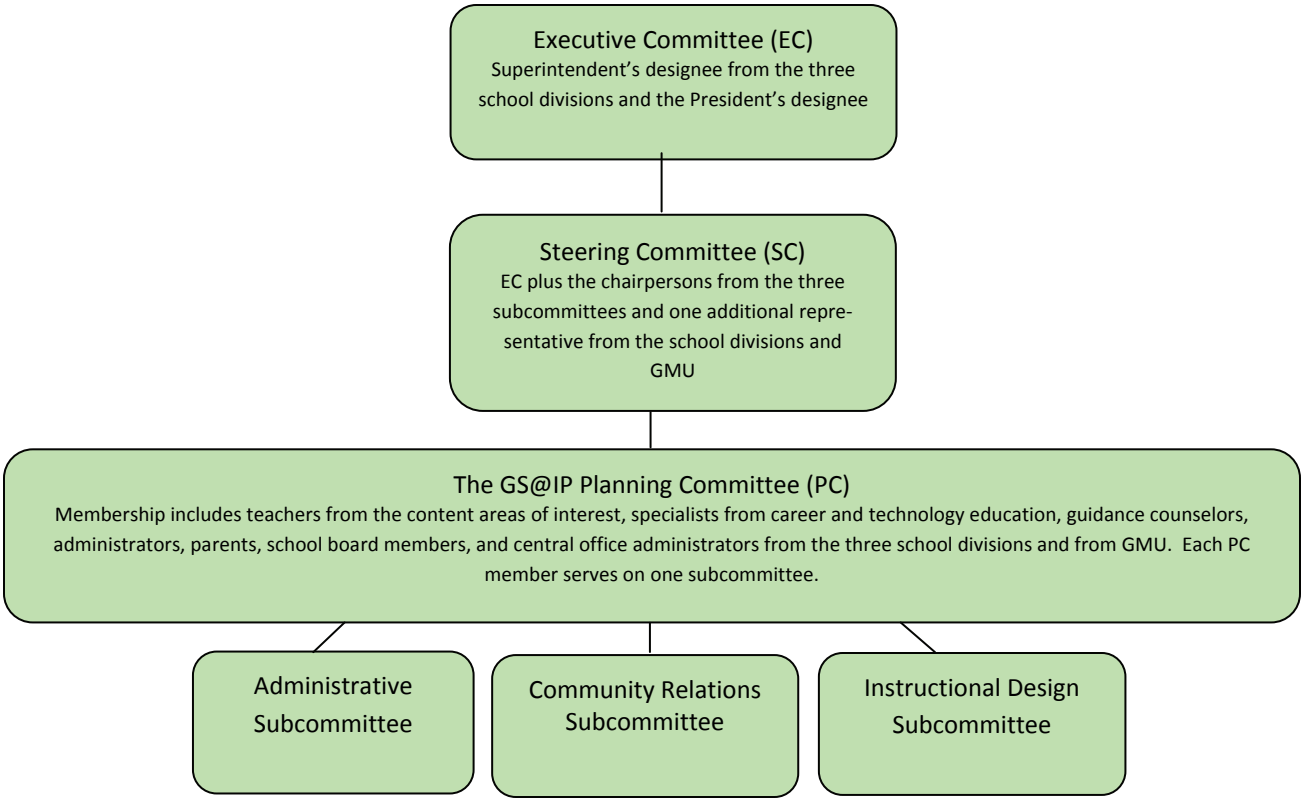
This location will ensure that no student has more than 40 minutes of travel time from his/her home base high school. These students, who possess a broad range of interests and talents, will be able to balance the opportunities afforded by a regional program for academically gifted students with the opportunities offered at their home-based high school. They can continue to be leaders in academics, fine arts, sports, Student Council Association (SCA) and other extracurricular activities, as well as to socialize with their age peers.

III. Governance and Organizational Structure

From its earliest days through the submission of this proposal, the planning for the Governor's School has been done through a tiered committee process. The GS@IP Executive Committee was composed of the superintendent's designee from each school division and a designee from George Mason University. Two additional administrators or teachers from each school division and an additional representative from George Mason University joined the Executive Committee to form the GS@IP Steering Committee. The chairperson for each of the three subcommittees was a steering committee member. The Planning Committee was composed of the Steering Committee and included school board representatives, parents, and additional content specialists from each school division, and George Mason staff. (See Appendix D.) The graphic below indicates the committee-subcommittee structure of the GS@IP Planning Committee.

Each member of the Planning Committee served on one of the three subcommittees: Instructional Design, Community Relations, or Administration. These groups carefully reviewed provisions for the *Administrative Procedures Guide for the Establishment of an Academic-Year Governor's School* and agreed to follow the guidelines set forth in the document. (See Appendix E.)

The GS@IP Planning Committee – Subcommittee Structure



The GS@IP Governing Board will be established as authorized by *§22.1-26* of the *Code of Virginia* and consistent with the regulations of the Board of Education for *Jointly Owned and Operated Programs 8VAC20-280-10 and 8VAC2-280-20*. The governing board shall be composed of two members elected or appointed from each participating school board. George Mason University will be a participating non-voting partner in the Governor's School. (See Appendix F.)

The management and administrative authority of the Governor's School shall be vested in the GS@IP Executive Committee of Superintendents composed of the division superintendents of the member school divisions, or each superintendent's duly appointed designee, and the President of George Mason University, or his/her appointed designee.

The executive committee's powers and duties shall include, but are not limited to, the following:

1. Managing, administering, and operating the Governor's School and its programs, including making personnel recommendations, subject to the authority of the Governing Board as set forth at *Virginia Code § 22.1-26* and the Regulations of the Virginia Board of Education.

2. Purchasing supplies, and purchasing, selling or disposing of equipment or appliances.

3. Preparing, with the advice and approval of the Governing Board, an annual program plan, budget, and plan for financing the operation of the Governor's School.

The Prince William County School Division shall serve as the Operational Fiscal Agent of the Governor's School. As fiscal agent PWC is responsible for the custody of the Governor's School's funds upon receipt of such funds from the Statutory Fiscal Agent, the Treasurer of Prince William County. The Operational Fiscal Agent shall arrange for the safe depository of school funds and, where necessary, see that sufficient collateral is posted to secure such funds. The Operational Fiscal Agent shall perform all duties relative to the financial affairs of the Governor's School, which the Operational Fiscal Agent is authorized and required to perform for the Prince William County Public Schools.

The governing board shall appoint a qualified director, upon recommendation of the executive committee of superintendents, who shall manage the day-to-day operations of the Governor's School. The policies and regulations of that school division serving as the fiscal agent shall govern the operation of the Governor's School, as well as any policies or regulations enacted by the governing board.

The director shall bring matters to and take direction from the executive committee of superintendents and shall make recommendations to the committee regarding programs of instruction, staffing needs, operational policies, finances, and all other matters within the purview of the committee.

A new program advisory committee, outlined more fully in the Administration section of this document, will provide perspectives on policies, curriculum, and technical areas of the Governor's School. The composition of the program advisory committee will maintain a broad representation from each of the participating partners.

IV. Mission, Vision, Purpose, and Core Values

Mission

The GS@IP students choose to engage in rigorous academic study, challenge themselves to acquire knowledge, develop understanding, think reflectively, and take intellectual and creative risks in problem solving for the benefit of Earth.

Vision

Students in the regional Governor's School will encounter a range of opportunities encouraging intellectual and academic excellence. Students will collaborate with experienced mentors in business, industry, government, and universities. As a learning community, students, teachers, and mentors will engage in analytical, creative and real-world problem solving through an integrated research model.

Purpose

The purpose of the regional Governor's School is to educate students in the related fields of science, technology, engineering, and mathematics in order to prepare them to contribute to the global community of the 21st century. The instructional design of the program integrates strands in biology, chemistry, and physics with mathematics, with concepts of engineering and technology, and with laboratory research. Learning experiences focus on real-world research with mentorship opportunities in business, industry, government, and universities.

Core Values

Learners identify personal goals and pursue challenges in a trusting and supportive environment. Decisions are made conscientiously based upon data; and such decisions are supported by a community focused on learning and teaching. (See Appendix G.)

V. Program and Curricular Design

The GS@IP, as a new member of the Virginia Academic-Year Governor's Schools, would continue that program's beliefs in accelerated learning to meet the needs of students whose remarkable abilities require specialized opportunities for growth and development. The instructional design (ID) subcommittee of the GS@IP has used the tenets of the Virginia Academic-Year Governor's School (Virginia Department of Education, 2007) as guidelines for its instructional and curricular components.

The Academic-Year Governor's School Programs shall provide educational options not available in home schools for students identified as gifted or eligible to be so designated. These programs will provide students with the following opportunities:

- *To develop their own separate identity as a community of learners,*
- *To learn and grow in an environment that nurtures the unique abilities and needs of gifted learners,*
- *To develop a positive and realistic concept of self and others,*
- *To belong to a community of learners who share interests and abilities,*
- *To learn about subjects of interest to them,*
- *To be risk-takers and decision-makers in a non-threatening environment,*
- *To provide career exploration and/or advanced classes which may help students as they prepare for college or other post-secondary opportunities, and*
- *To expand their knowledge of and interest in science and technology, the humanities, and the arts by providing interaction with community, industry, professionals, and higher education.*

Preliminary Decisions

Based on discussions held in 2007, superintendents and administrators within the three participating school divisions concluded that the greatest need for accelerated services for their high school students paralleled a STEM - science, technology, engineering, and mathematics - initiative. As presented in the opening section of this proposal, the Manassas City, Manassas Park, and Prince William County area is replete with high tech companies, both large and small. The presence and expansion of corporations from British Aerospace and Marconi Electronic Systems (BAE) to Lockheed Martin, as well as smaller enterprises like Georator to Colgan Air, offer evidence of the area's need for a replenishing pool of highly qualified, prospective employees as well as entrepreneurs and inventive leaders in these fields that rely on applied science, engineering, mathematics, and technology.

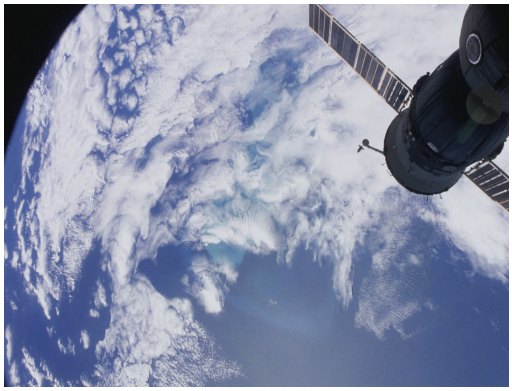
Further discussions across the divisions prompted the members of the initial planning group to outline an intensive program in science, technology, engineering, and mathematics. In summer 2007, discussions began to include representatives from GMU-PWC.

In August 2007, the newly initiated GS@IP Planning Committee began its design of the program presented in this document. The program was designed to prepare students with these opportunities:

- To acquire science and mathematics knowledge and skills commensurate with their abilities;
- To engage in the application of the relevant engineering practices, use of technology, and original research; and
- To develop their career goals and aspirations that distinguish them from their age-level peers.

Program Theme and Focus

Earth



As the ID subcommittee began its work on the theme/ focus for the program, it considered the needs of the area as well as the needs of students. Over a series of months, stakeholders held many discussions and returned time and again to the diverse use of technology found in local business and industry. Additionally, the ID subcommittee reviewed the existing specialty programs available for Prince William County Public Schools to ensure that this program met an unsatisfied need and did not jeopardize the integrity of any of those programs.

Those discussions helped the subcommittee recognize that a theme and focus of "Earth" allowed students to explore topics through integrated problem solving and research, while providing ample time to target learning to the depth required for gifted learners. (See Appendix H.)

The GS@IP program will emphasize research and problem solving around the focus "Earth." Within an interdisciplinary study, students will consider the many and varied aspects of Earth:

- How Earth and its ecosystems work,
- How organisms, especially humans, interact with Earth's life support systems/ environment; and
- How problems that affect Earth and its inhabitants are recognized and addressed.

This integrated program will capitalize on the more globalized definitions of environmental and geosciences that encompass study in the broader context of economics, social science, governmental policy, and management as they describe sustainable growth in the systems of Earth.

Curricular Goals and Instructional Objectives

Building on the noted work of researchers in curriculum design for gifted learners such as Joyce VanTassel-Baska (1993) and June Maker (1996), the ID subcommittee recommended goals and objectives for the GS@IP that respond to the qualitatively different manner in which these gifted learners optimally function.

The content selected to be used with these learners needs to be modified to (a) focus on the abstractions and concepts that unite facts and processes; (b) reflect the complex nature of knowledge from different disciplines; and (c) offer students opportunities to focus on different aspects, points of view, problems, or issues under a broader theme.

The learning processes to be used with these students need to be modified to (a) provide open-ended questions and problems where answers are marked by thorough investigation of the variables within the situation; (b) require the acquisition, use, and evaluation of information rather than the determination of a single, correct answer; (c) promote inductive reasoning and discovery or inquiry method of learning; (d) expect students to demonstrate their reasoning through evidence in a variety of forms; (e) use motivational power of freedom of choice in content, process, product, and evaluation of their work; and (f) respond to their learning rates by varying the pace and methodology of presentation of information.

The results or product expected from these learners needs to be modified to (a) be authentic and built around real problems, issues, and concerns; (b) be presented to a relevant audience with both knowledge and interest in the information conveyed; (c) be transformational, not merely summaries of the works of others; (d) reflect the variety of products that can convey students' competence and creativity; (e) offer insights into what the student has both gained from and brought to the relevant study; and (f) include relevant evaluative criteria from the teacher, the student and other stakeholders such as the mentor, expert , parents, or guardians.

Therefore, the following goals and objectives will form the foundation of the evaluative structure of learning and teaching experiences of the GS@IP.

I am pleased that the Governor's School @ Innovation Park has selected Earth and our environment as our focus. This is an excellent opportunity for tomorrow's engineers, scientists and community leaders to learn first hand the intricate cause and effect relationship that every day decisions have on generations to come. Even more importantly, the curricula of instruction is balanced so that these inter-relationships are shown daily through both instruction and hands-on learning experiences.

Scott Albrecht
School Board Vice-Chairman
Manassas City Public Schools

Goals and Objectives

Goal 1: To provide an integrated, problem-based exploration of science, technology, engineering, and mathematics commensurate with the abilities of its students and based on the core, conceptual knowledge and skills of each area.	***Objectives:*** a. To develop a sequence of integrated courses that link advanced sciences with the appropriate advanced mathematics skills; b. To align instructional opportunities across science and mathematics that require students to study, research, and collaborate as they propose solutions for relevant problems using applied engineering and technology; c. To provide opportunities that build a community of learners, as students share knowledge through collaborative research investigations; and d. To incorporate assessment of students' abilities, rates of learning, and interests into the design and modification of program goals and design.
Goal 2: To extend students' exploration and engagement into original research and application through mentorships and collaboration with experts in their selected fields of science, technology, engineering, and mathematics.	***Objectives:*** a. To extend content knowledge in mathematics and science through direct application of engineering principles and technology in a variety of settings; b. To immerse students in the application of the scientific method and field-based research; c. To engage students in active adaptation in authentic situations provided through mentorships and service learning opportunities; and d. To provide students with opportunities to explore science, technology, engineering, and mathematics within relevant issues with experts in a variety of fields.
Goal 3: To enrich students' interest in the problems facing Earth and its environment through support of their endeavors, respect for their discoveries and insights, and encouragement of their personal goals and aspirations in the fields of science, technology, engineering, and mathematics.	***Objectives:*** a. To encourage students' career aspirations through placement in relevant collaborative groups and appropriate mentorships; and b. To encourage students' appreciation for the knowledge and skills of others and their awareness of the importance of collaboration between and among public and private entities.

Strands of Study

The GS@IP program and curricular design uses the *strand approach* to allow maximum student growth and development in the sciences. Students will enter GS@IP at the junior level and select a strand based on interest and preparation that they will follow for the two-year program. Three strands – environmental biology, environmental chemistry, and environmental physics are articulated to move students through content typically experienced in the first two years of university academic study.

The marked difference between the GS@IP instructional design and that of either the traditional high school accelerated science and mathematics program or the early years of university study is a matter of the manner and depth, not simply a matter of early exposure. **While the content will be college-level, it will not be college-like.** As shown in the following graphic, the program and curricular design indicate the importance of cross-disciplinary learning and applied research and problem solving as significant foundations for deeper analytic and creative thinking. →

The GS@IP
Elements of the Instructional Design

Core science content derived from one or more GMU courses, emphasizing skill and knowledge as well as conceptual development

Correlated authentic endeavors and assessments used to ground content and skill development

Governor's School Integrated Instructional Design

Core mathematics contents selected and presented in collaboration and support with the specific science content

Research skills and analytical statistics taught collaboratively and reinforced through mentorships and field experiences which employ applied engineering

In the integrated design, science will serve as the source of problems around which the curriculum is designed. Mathematics will take a supportive role. Mathematical knowledge will be selected and aligned to support students' research. As students are assigned topics within or across their strands, the mathematics and engineering principles needed to enable their research and inquiry will spiral throughout the science content. The GS@IP program and curricular design raise the floor of learning above that offered at any of the area high schools, whether through International Baccalaureate, Advanced Placement, Cambridge International Examinations courses, or dual enrollment courses. This program is unique in two ways: first, its emphasis on the integration of science with the appropriate mathematics and principles of engineering is not found in local high schools; second, its extensive use of research and inquiry learning, and the application of skills through mentorships and service learning are similarly opportunities not available in area high schools.

The instructional design of the GS@IP strives for a different approach and perspective from either the typical high school AP course or the traditional college presentation of content. Instead, the GS@IP program is predicated on inspiring future leaders for the 21st century's global knowledge economy which is marked by the dramatic increase and availability of information, and by the increasing effect of technology on people and their relationship to the world. Table 1 on page 15 offers examples from two recommended courses that demonstrate the difference this program strives to achieve.

Manassas Park students have enjoyed dynamic teachers and learning in mathematics and science for many years. The inclusion of the Governor's School option will allow our high school students with remarkable abilities and interests in the area of research and scientific inquiry to explore topics and issues typically reserved for college students. We are excited that we are able to open new doors of discovery and investigation for students in this region using the resources and opportunities that abound in this area.

Michael Wine
School Board Chairman
Manassas Park City Schools

Table 1: Comparison of Instructional Design and Content Mastery

Content	Traditional High School/Advanced Placement Classes	Traditional College Content	The GS@IP
		Advanced Mathematical Modeling	
Trigonometry Component	The standard high school course contains a 12 – 15 week course in trigonometry with an emphasis on circular and triangle trigonometry concepts. Real world applications such as harmonic motion, sinusoidal functions, and vectors are introduced and explored, but not necessarily emphasized and assignments usually do not include "hands-on" learning.	The trigonometry component of the standard college class would not be substantially different from the traditional high school class. The primary difference would be the depth to which each topic is explored. Again, trigonometry as a tool for mathematical modeling is not emphasized and "hands-on" experiences would be limited.	In this course, circular and triangle trigonometry will be taught to the depth of the traditional college course. In addition, there will be a primary emphasis on the uses of trigonometry to model and solve real-world problems. Vector applications would be emphasized. Added trigonometry topics will include polar mathematics and parametric functions. The need to encapsulate cyclical Earth phenomena will drive the study of trigonometric functions. Whenever applicable, students will include trigonometry concepts and modeling in their science and research classes. All appropriate skills will again be employed in mentorship settings as required by the activities supervised by the mentor.
Functions Component	The usual high school pre-calculus class reviews and extends algebra concepts and techniques, provides a "library" of elementary functions and associated function concepts, practices analytic skills, and introduces calculus concepts, particularly limits. Exponential functions and logarithms are taught but not given weighted emphasis. Real-world modeling and problem solving is limited.	The course content would not differ significantly from a rigorous high school course. The primary differences would be the depth to which individual topics are explored and the difficulty of exercises and problems.	This class would include all the topics of a rigorous high school or college class. There will be an emphasis placed on modeling and solving real-world problems, particularly using exponential and logarithmic functions as models. Data for creating models will come from science and research classes. Analytic skills will be emphasized. In addition, this course will provide introductory concepts and skills in sequence and series, linear algebra, probability and statistics, combinatorics, and graph theory. The study of probability and statistics will be an outgrowth of proper professional presentation of individual research.
		Calculus 1	
Calculus	AP Calculus BC emphasizes four broad topics, limits; derivatives; integrals and their polynomial approximations; and series. In each topic, content and objectives are specifically designed to emphasize broad problem solving concepts and not necessarily applications to specific sciences or engineering fields. AP Calculus strives to present the concepts of calculus as a unified subject, emphasizing the relations among topics and concepts.	The usual first (or first two) courses in college calculus present all the topics of AP Calculus plus several additional topics, including extended methods and applications of integration, conics, polar equations, and parametrics. Many college calculus classes are now tailored to particular fields of study, i.e., "Calculus for Business." or "Calculus for Engineers."	Calculus I is designed to provide the topics and concepts associated with typical first year college/ university calculus at the honors level, usually a course distinctly different from regular Calculus I courses. In addition, problem-solving and applications will be specific to the science and research component of the GS curriculum, whenever appropriate. Calculus as a mathematical tool for modeling real-world problems will be emphasized. Based on successful completion of this course, students will be prepared for both the AP Calculus BC exam and further study in calculus.

Integrated Curriculum and Design

As previously indicated, the GS@IP curricular design allows students to choose among three strands: environmental biology, environmental chemistry, or environmental physics. Each strand features prescribed junior and senior science courses. Partnered with each science course is a mathematics course structured and presented in conjunction with the relevant scientific principles, concepts, and theories. In addition, each course integrates fundamental principles of engineering.

Beyond the integration of mathematics to support the science content, students from across the three strands will take Research Applications and Integrations (RAI-I and RAI-II) each year where students must work collaboratively. Through this dedicated cross-pollination and diverse group research projects, students will recognize the necessity of the "interdisciplinary approach" to problem solving in pursuit of viable solutions to environmental problems.

Teachers from the three science strands will work with the RAI teachers to monitor the use of and the need for additional instruction in specific scientific content to enable students to engage in active laboratory- and field-based research.

Mentorship Arrangements

The RAI teachers will monitor students' use of their knowledge and skills in mentorships in area corporations and industries. These mentorships will enable students to bring the scientific and mathematic concepts taught in the GS@IP courses into sharper relief as they are employed in business and industry.

Mentorships will serve a singularly important venue for engineering applications. Through these mentorships, students will have opportunities to work alongside and learn from practicing engineers, mathematicians, network designers, programmers, technicians, and professionals in the careers to which these students aspire. The mentorship is intended to

Engineering Applications

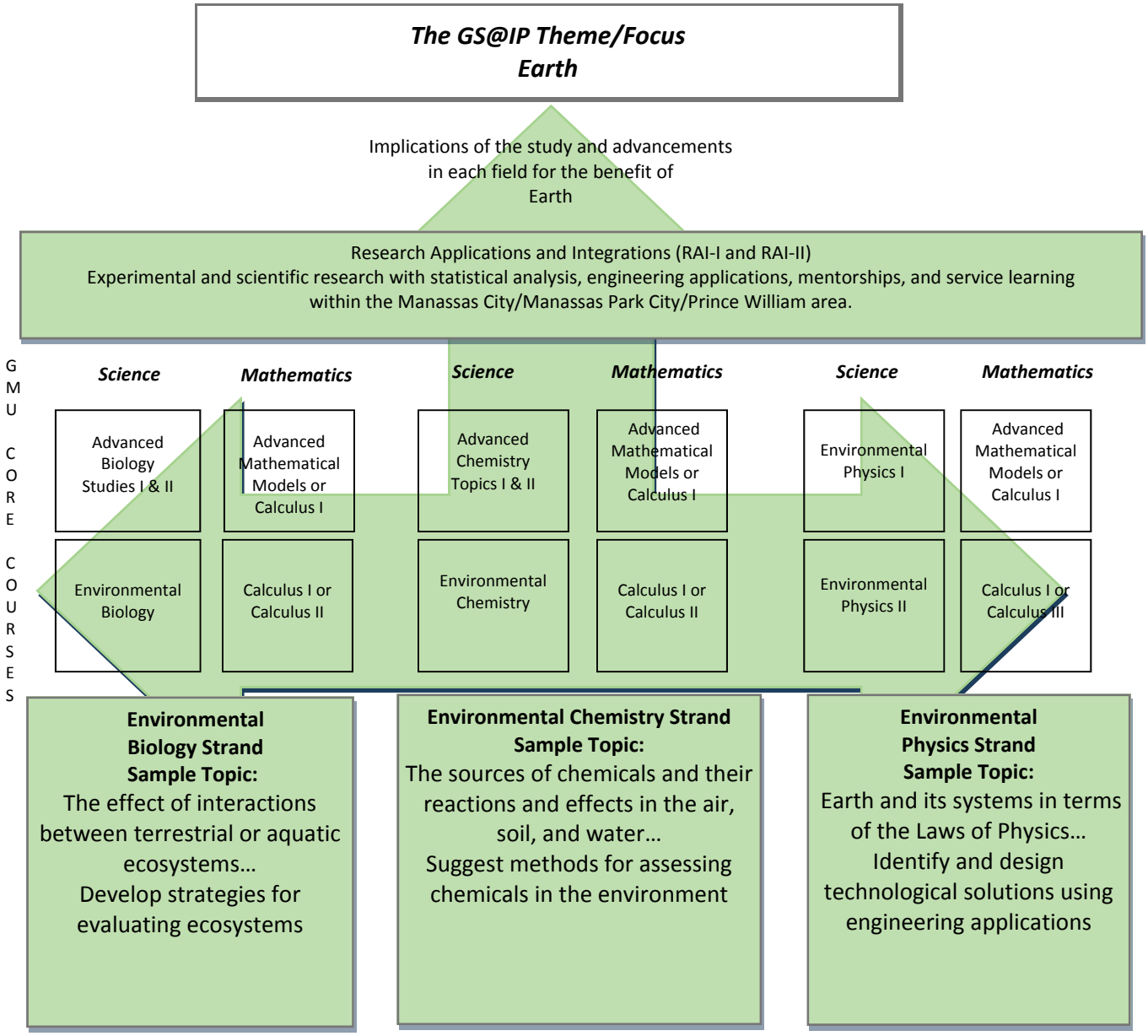
be an authentic experience, in which students become practicing members of design and engineering teams. These experiences are intended to reinforce students' acquisition of knowledge and skills, but more importantly, these are opportunities for students to gain an appreciation for the processes that make knowledge and skill useful in today's world. (See Appendix I.)

In order to determine the flow of the development of the principles of engineering across the curriculum, Appendix J Engineering Concepts Crosswalk, indicates where knowledge and skills will be introduced, developed, reinforced, and extended throughout the program.

Service Learning Components

The RAI teachers will also monitor students' engagement in service learning activities. These activities will press students to work with nonprofit and other approved organizations to adopt a task and reach a successful resolution of that task. Whether it is to build a working model of a compound machine to help third-grade students better understand the nature and function of simple machines, or to design and construct a Web page for a program in the community, students will be expected to demonstrate the use of their leadership and collaborative skills as well as their content skills and knowledge.

As indicated in the following graphic, content, process, and products are aligned with problem solving to maximize the coherence and integration of knowledge and skills.



Recommended Science Course Descriptions

Environmental Biology Strand

Advanced Biology Studies I (ABSI) – Junior Year First Semester	**Advanced Biology Studies II (ABS II) – Junior Year Second Semester**	**Senior Environmental Biology (SEBIO) – Senior Year Two Semesters**
Advanced Biology Studies I is a focused survey course with objectives that will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment for this course and its second semester counterpart will demonstrate students' conceptual reasoning regarding the nature of change within the life sciences fields.	Advanced Biology Studies II is a focused survey course with objectives that will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment builds on students' research from ABS I.	Senior Environmental Biology is a focused study of microbiology with concepts basic to viruses and prokaryotic and eukaryotic cell structure and function. Organic change will be studied from the perspective of structure, classification, physiology and distribution, with particular interest paid to the technological and medical implications of microbiotic change in our world. The course objectives will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment builds on students' research into aspects of environmental biology and the implications of microbiological changes that affect Earth.
NOTE: *For more complete information regarding each course, please review the draft individual course outlines in Appendix K.*		

Recommended Science Course Descriptions

Environmental Chemistry Strand

Advanced Chemistry Topics I (ACT I) – Junior Year First Semester	Advanced Chemistry Topics II (ACT II) - Junior Year Second Semester	Senior Environmental Chemistry (SECHEM)– Senior Year Two Semesters
Advanced Chemistry Topics I is a focused survey course with objectives that will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment for this course and its second semester counterpart will demonstrate students' conceptual reasoning regarding the study of Earth's macro and micro chemical systems.	Advanced Chemistry Topics II is a focused survey course with objectives that will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment builds on students' research from ACT I.	Senior Environmental Chemistry is a focused study of the organic chemical foundations that have paved the way for the chemical, industrial, petroleum, and biological revolutions of the past 75 years. The course objectives will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/ culminating activity/authentic assessment builds on students' research into aspects of environmental chemistry and the implications of change on Earth.

Recommended Science Course Descriptions

Environmental Physics Strand

Environmental Physics I (EPI) – Junior Year Two Semesters	Environmental Physics II (EPII) – Senior Year Two Semesters
Environmental Physics I is a physics course with major concepts integrated from the fields of engineering and geology. The course objectives will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/culminating activity/ authentic assessment will demonstrate students' conceptual reasoning regarding the physical laws of nature.	Environmental Physics II is a physics course with major concepts integrated from the fields of engineering and geology. The course objectives will be accomplished through the use of experimentation and a comprehensive laboratory component with field research utilizing advanced technologies. The culminating authentic task/culminating activity/ authentic assessment will demonstrate students' conceptual reasoning regarding advanced physical processes.

Recommended Mathematics Course Descriptions

Advanced Mathematical Models (AMM) – Junior Year Two Semesters	Calculus with Analytical Geometry I (CALC I) – Junior Year or Senior Year Two Semesters	Calculus II (CALC II) – Senior Year Two Semesters
Advanced Mathematical Models is a course in pre-calculus mathematics utilizing advanced technologies designed to support the science program and provide a thorough preparation for calculus and other advanced mathematics courses. The course will include college algebra, trigonometry with an emphasis on vectors, and a comprehensive introduction to calculus. Each topic will be taught through a problem solving approach emphasizing the student's ability to analyze, model, and solve real-world problems.	Calculus with Analytical Geometry I is a two semester calculus course using advanced technologies that includes the study of limits, derivatives, integrals, optimization, conic sections, parametrics, and vectors and their application in physical, chemical and environmental phenomenon. Each topic will be taught through a problem solving approach emphasizing the student's ability to analyze, model and solve real-world problems.	Calculus II is a two semester calculus course using advanced technologies and includes the study of partial differentiation, multiple integrals, line and surface integrals, and three-dimensional analytic geometry; and first and higher-order ordinary differential equations. Each topic will be taught through a problem solving approach emphasizing the student's ability to analyze, model and solve real-world problems.

Recommended Research Course Descriptions

Research Applications and Integrations I (RAI-I) Junior Year, Two Semesters	Research Applications and Integrations II (RAI-II) Senior Year, Two Semesters
Research Applications and Integrations I provides students with diverse opportunities to employ and evaluate their conceptual knowledge. Students will engage in service learning and field experiences through mentorships that incorporate engineering, ethics, scientific experimental design, statistical analysis, scientific literature review, and journal/technical writing. This course supports the student's work on the authentic task/ culminating activity/authentic assessment as well as independent research endeavors. Relevant advanced technologies will promote scientific literacy and communication skills. The coursework will include content comparable to AP Statistics so that students will be able to take the AP test. A major part of this course is to foster global communication and collaboration within the program strands.	Research Applications and Integrations II will continue and expand students' opportunities for small group and individual research building on the skills and experiences gained in RAI. Opportunities will continue for students to employ and evaluate their conceptual knowledge and to work collaboratively with students from other strands. Students will engage in service learning and field experiences through mentorships that incorporate engineering, ethics, scientific experimental design, statistical analysis, scientific literature review, and journal/technical writing. This course supports the student's work on the authentic task/culminating activity/ authentic assessment as well as independent research endeavors. Relevant advance technologies will promote scientific literacy and communication skills. A major focus for RAI-II will be the peer review, publication, and presentation of students' work in noted scientific journals and before organizations such as the National Consortium of Specialized Secondary Schools for Science, Mathematics, and Technology.

Curricular and Instructional Premises

The critical or distinguishing attributes of the Academic-Year Governor's Schools are not the courses to which students will have access, but instead the manner and depth in which the content, both knowledge and skills, will be presented. As content and opportunities are selected, aligned, and integrated, critical consideration must be given to the reality that these are gifted learners. Their learning is marked by the following behaviors that distinguish them from their age-level peers:

- Create new designs or ways of doing tasks
- Manipulate information
- See relationships and combine ideas
- Thrive on complexity and ambiguity
- Construct abstractions
- Need a purpose for what they are doing
- Draw inferences
- Focus on the journey of learning

Noting these differences in learning behaviors, curriculum and instruction for these students will be modified to ensure that both support students' intellectual and social/emotional growth and development. Governor's School staff will use these premises to guide their work as instructional strategies and opportunities are developed and as curriculum is drafted and revised.

1. The principles of differentiation for curriculum/instruction for gifted students are embedded in all coursework. These principles include the requirement that
   - Content is approached conceptually, using relevant problems, issues, and concerns as the frame of reference for the selection and use of information and activities;
   - Integrated curricula from mathematics and science are presented and reinforced through applications incorporating relevant technology and engineering principles;
   - Content selection is made with a respect for the interests and abilities of the student;
   - Tasks and assignments require abstract reasoning at the analysis, synthesis, and evaluative levels of processing;
   - Tasks promote students' independent and self-directed use of research methods and materials through the use of choice in a variety of aspects of each major assignment;
   - The curriculum and assessment rely on complex tasks that allow students to challenge existing ideas, to produce new ideas, and to develop new techniques, materials, and solutions to wide-ranging problems;
   - Students work collaboratively across strands to encourage self understanding as well as to foster appreciation for the strengths and capabilities of others; and
   - Students engage in meta-cognitive evaluation of their own work and abilities based on multiple criteria. →

(National/State Leadership Training Institute for the Gifted/Talented, 1978)

2. Coursework requires students to complete classroom/laboratory as well as extension activities that involve mentorships, service learning, and field research.

3. Coursework throughout the two years requires a level of technological training that includes
    - Extensive use of spreadsheets;
    - Extensive use of graphic presentation software;
    - Extensive use of databases for the collection and analysis of raw data;
    - Extensive use of Geographic Information Systems (GIS), Global Positioning System (GPS), and other data collection devices; and
    - Extensive use of interactive whiteboard and other presentation tools.

4. Coursework is problem-based, relying on the scientific method and research for alternatives and solutions. In all situations, coursework will be built on prevalent technologies, relevant engineering applications, 21st century skills, and market-driven forces and expectations.

5. Assessment of coursework is a collaborative endeavor involving the student and his/her goals for the specific task, the expectations of the teacher, expectations of George Mason University's collaborative teachers, and the students' mentors or field supervisors.

6. Instruction provided at the GS@IP is qualitatively and quantitatively different from instruction offered to highly able and motivated science, technology, engineering, and mathematics students in high schools in Manassas City, Manassas Park City, and Prince William County.

7. Professional development in the design, instruction, and assessment for problem-based, authentic instruction will be provided continuously to all instructors and teachers working in this model and will provide components upon which their work with students is evaluated.

George Mason University's Continuous Curriculum And Instruction Collaboration

Faculty and administrators from GMU-PWC were brought into the planning process and, as the extended timeline indicates, the collaboration between the GS@IP faculty and GMU faculty will increase following the approval of the program by the Virginia Board of Education. Building upon the instructional design recommended by the ID subcommittee, the GS@IP-GMU faculty will develop more detailed syllabi and other supporting documentation for each course.

As the following table indicates, extensive collaboration and document development will occur following Virginia Board of Education approval and continue periodically as the program is implemented.

Table 2: The GS@IP—GMU Curriculum Collaboration

Date	Group	Activities	Outcomes
May 2009	ID subcommittee and representatives from the provost's office	Review initial instructional design and discuss expectations for dual enrollment credit and the required supporting documents	Revision of extended timeline Meeting agenda and minutes
September 2009		Confirmation of approval of program by the Virginia Board of Education	
December 2009	GMU provost's representatives	Determination of which GMU personnel will work directly with faculty to develop more detailed materials Initial list of points of concern regarding recommended course descriptions and draft course outlines	List of GMU personnel with contact information Initial written review
January 2010	Director is appointed	Discussions will begin regarding facilities, faculty selection, and curriculum	Meeting agenda and minutes
March 2010	GS director and GMU curriculum group	Schedule of meetings between April and June to finalize documents to support request for dual enrollment credit from GMU	Calendar, locations, objectives
April – May 2010	GS faculty and GMU faculty	Syllabi development sessions; documents to support dual enrollment credit for the MOU with GMU	Syllabi MOU support

The planning committee recognizes the critical importance of working closely with the appropriate administrators and faculty from GMU to ensure that information and documentation are developed to enable the university to determine whether dual enrollment credit may be provided for specific courses offered by the GS@IP.

Traditionally, the three school divisions have used Northern Virginia Community College, and typically one semester (.5) of high school credit translated into three semester hours of community college credit. The initiation of this program will not change any existing dual enrollment agreements these divisions have with Northern Virginia Community College. While GS students may take these dual enrollment courses, they are not part of the GS requirements. The regional governing board will include in its MOU with GMU the specific number of dual enrollment credits GS students will earn for specific courses.

As the instruction and program design subcommittee worked through course development, two premises served as the core of assumptions.

- Each course offered has, at its core, critical concepts from developmentally appropriate science, mathematics, or research content with engineering applications.

- To ensure the depth of content and experience and integration of disciplines, significant concepts and applications from more advanced GMU courses were woven into the science, mathematics, engineering, and research applications courses. The scope of content does not purport to deliver a complete inventory of concepts, skills, and theories within those advanced courses.

The ID subcommittee limited its consideration of GMU dual enrollment course credit to freshman- and sophomore-level courses in science and mathematics with limited exposure to courses that carry a 300-level label. A proposed correlation chart is provided in Appendix L indicating initial thoughts on the articulation of the GS@IP high school credits and GMU science and mathematics undergraduate credit.

In addition to GMU validation of semester credit for courses presented at the GS@IP, GMU instructors will be involved in the development of the individual courses. Selected instructors and other personnel will be involved in the design of content, integration of laboratory and field experiences, and the expectations for examinations.

In subsequent years, GMU instructors and the GS@IP faculty will continue this collaboration through a variety of formal mechanisms in the administrative components. Through the director's planning committee and departmental advisory committees, GMU instructors will have opportunities to provide insights into the course content, instructional design, and student research and engineering applications assessment. GMU instructors will also be involved during development of the annual course evaluative survey and summary of data collected. This information will be used formatively to monitor and adjust the content presented to the GS@IP students.

As part of the first year of study in an effort to ensure consistent depth of coverage, the GS@IP students may take corresponding semester examinations from the GMU course for which they are acquiring credit. Results of examinations may be used in the evaluation and revision of the instruction and content for future years.

Standards of Learning

Since the courses that students will take at the GS@IP are predicated on their completion of mathematics past Algebra II and science beyond introductory biology, chemistry, or earth science, these end-of-course examinations will have been taken at the base middle or high school before these students enter the GS@IP. Remaining end-of-course or other Standards of Learning assessment components will be taken at the student's home base high school in accordance with the testing schedule of the school division.

Examinations for College Credit

The GS@IP planning committee recognizes the importance that colleges/universities, parents, and students place on the acquisition of Advanced Placement (AP), Advanced International Certificate of Education (AICE) and International Baccalaureate Diploma (IBD) credits in high school. While the course design for this program is substantially different from the course of study in accelerated mathematics and science courses in traditional high schools, the GS@IP curriculum will provide students with the depth of knowledge and skills expected to pass such externally moderated examinations for college credit in selected areas. To assist students in preparing for selected AP, AICE, and IBD examinations, specifically in biology, calculus, chemistry, physics, and statistics, preparatory sessions will be sponsored by the Governor's School, after school hours, to review the format of these timed examinations for college credit.

Correlation with School Division's Programs for the Gifted

The directors and supervisors of programs for the gifted will serve on one or more of the director's planning and advisory committees. Through those regularly scheduled meetings and through additional discussions, the directors/supervisors of programs for the gifted will be involved in decisions regarding, but not limited to, the program application process, timeline, selection criteria, and evaluation of process; design and evaluation of curriculum and instruction; professional development of teachers/mentors/researchers and others who work directly with the GS@IP students; program evaluation and modification; communications including Web pages and printed materials; and instructional provisions and modifications based on feedback from home base high schools and parents. (See Appendix M.)

Current Services for Gifted/Talented Students

As is required for submission of a proposal for a new Academic-Year Governor's School, the proposed curriculum and instructional design must be significantly different from those programs available in the base high schools for school divisions' gifted students. The program outlined in this section differs significantly from the program in Manassas City and Manassas Park. In those two school divisions, students identified as gifted are directed toward AP or dual enrollment opportunities within the standard course of study. However, there is limited, if any, integration across content areas. Occasionally overlapping units of study in science and mathematics lead to opportunities for more advanced inquiry and study, however, individual or small group research across science strands is not available.

In Manassas City, mathematics content emphasizes advancing students' knowledge and comprehension of concepts and skills in a traditional hierarchical approach. Honors and AP courses are typically more differentiated than are the regular sections of mathematics courses. However, honors and AP do not respond to the specific need for acceleration and differentiation for the school divisions' most advanced students.

In Manassas City, scientific research opportunities are limited to laboratory experiments with limited additional field study using those resources in immediate proximity to each campus. A student internship program is available as part of the career education assignment at Osbourn High School. The internship is rarely used by advanced students and it is not integrated into the science and mathematics programs. It does not emphasize individual and small group, collaborative field-based research. Service learning is supported at Osbourn High School through its peer mentoring program.

Manassas Park City similarly offers advanced mathematics through Calculus 2. The division also provides limited research opportunities through its laboratory science courses. It offers a community service course at its high school that requires students to work in either a school or nonprofit setting to offer assistance to clients/students and staff/teachers, but it does not offer any type of mentorship program.

Prince William County Public Schools has a comprehensive program of advanced mathematics through Calculus AB and BC as well as International Baccalaureate Diploma (IBD) and Cambridge (AICE) accelerated mathematics options. Within its specialty programs, research endeavors are targeted toward the focus of the school. For example, students in the biotechnology program at Osbourn Park High School conduct research in the school and area laboratory settings in the areas of biology, chemistry, physics, and environmental science. In this program, concepts of biology and chemistry are integrated, but are not necessarily integrated with mathematics or with any type of engineering application. A limited number of mentorship opportunities are available. Service learning is a component of all PWC specialty programs as noted in the division's *High School Program Opportunities* brochure.

In addition, all PWC high schools have a seminar program for identified gifted students. This program is designed to help students make cross-curricular connections between and among disciplines.

Summer Boot Camp

Students entering the Academic-Year Governor's School from any of the area high schools will need to be supported as they move from the more traditional programs to a model built on connections. The proposed design expects students to make connections across content areas and to demonstrate collaboration and teamwork skills similar to those found in the fields of study they may pursue after graduation. Due to the nature of the boot camp program, it will be included in the school calendar and all students will be expected to attend.

It is important, therefore, that teachers and students have an opportunity to become acquainted with the various facets of the program design. Teachers will need to assess skills to determine whether individual students have the requisite knowledge for Advanced Mathematics Models or for Calculus I with Analytical Geometry. Additionally, students' skills in technology use will similarly need to be assessed. This program will require extensive knowledge of spreadsheet and database software. Opportunities to work with both kinds of software in advance of the start of class will enable the professional staff to determine how much reinforcement is needed within in the formal classroom presentation. Students will have conducted laboratory research at their respective high schools, but few will have been placed in the position to recognize a problem, analyze the variables within the problem, and then design, conduct, and communicate their findings regarding the initial problem. Most importantly, few of these students will have had the opportunity to work extensively with other students with similarly deep and intense interests in environmental sciences and research devoted to the study of environmental science.

The one week Summer Boot Camp will provide its new class with these opportunities:

1. Familiarize students with the nature and purpose of GS@IP;
2. Familiarize students with the GMU-PWC facilities;
3. Allow teachers to determine which level of mathematics is appropriate for each student;
4. Acquaint students with the research design to be used throughout the two-year program;
5. Acquaint students with the nature of problem-based learning;
6. Acquaint students with spreadsheet and database software and other important technology;
7. Acquaint students with the expectations of the mentorship and the service learning components;
8. Allow staff and administrators to monitor and adjust the structure of the program based on the students selected to attend the program; and
9. Allow students, faculty, and staff to build a community of learners that will share the GMU-PWC environment for the next two years.

"The proposed regional Academic-Year Governor's School's emphasis on science, technology, engineering, and mathematics is a positive step forward in Virginia's efforts to ensure the availability of a highly skilled, technically proficient workforce to meet the future needs of businesses like Lockheed Martin."

Denise Saiki, Vice President & General Manager
Lockheed Martin—MS2 Undersea Systems

VI. Student Selection and Criteria

Student selection for the GS@IP is an open, multi-faceted process. Any student from the three participating school divisions who feels he or she has the foundation to succeed in the program is encouraged to review the application process and selection criteria and apply through his or her school division.

The process of selecting students relies heavily on the work of many researchers in the field of assessment. These researchers conclude that optimum recognition of giftedness and advanced learning capabilities are indicated by students' insistent need to understand the overarching concepts, unifying themes, and coherent view of knowledge, themselves, and the world.

Critical Tenets of Selection

1. Once an application has been submitted for consideration, the student will be evaluated on the total collection of elements required in the application. No student will be removed from consideration through the use of a "cut score" on a single item, test, or measure.
2. Students deserve the optimal opportunity to demonstrate their exceptional reasoning skills in science, technology, engineering, and mathematics. The application process will be marked by its consistent, appropriate, and fair selection, use, and evaluation of materials and process.

Selection Criteria

Aptitude

Students who will be successful in this integrated and research-based program will require an exceptional aptitude for the core elements of science, technology, engineering, and mathematics. Such knowledge is typically assessed using instruments that determine a student's verbal/linguistic and non-verbal/quantitative reasoning capabilities. A variety of aptitude measures currently exist that have been valid and reliable in the assessment of verbal and nonverbal reasoning. The selection process will include data from current, valid, and reliable aptitude measures.

Achievement

The assessment of achievement is critical to the determination of students who will be successful in this rigorous program. Achievement may be assessed in many fashions: Grade point average, teacher recommendations, norm-referenced measures, work samples or demonstrations, etc. Regardless of the method of evidence of achievement, students selected will be expected to demonstrate previous achievement in the core elements of science, technology, engineering, and mathematics. →

While grades are indicative of student achievement, researchers increasingly cite examples of randomness across grading methods and criteria from classroom to classroom. Attempting to standardize grades as a reliable criterion across school divisions is made increasingly difficult as labels such as honors, AP, Cambridge, and GT enter as variants of instructional design. Students may also include a recommendation from a relevant third professional (nonimmediate or extended family member) of the individual student's choice.

A variety of nationally norm-referenced achievement measures currently exist that have been found valid and reliable in assessing student learning in the fields of science and mathematics.

Portfolios have become increasingly important in the assessment of aptitude, achievement, motivation, persistence, and interest. Through a collection of items, reviewers representing each school division are able to determine the extent to which work demonstrates the student's (a) above grade- and age-level reasoning, insights, and perspectives; (b) effective organization and communication using materials and resources in clever and unique ways; (c) complex and intricate nature of the student's learning; (d) in-depth understanding of the problem, task, or idea; (e) research pursued in consideration of the problem, task, or idea; and (f) high interest, perseverance, and motivation brought to assigned and independently selected tasks. The selection process will include data from a portfolio of prescribed as well as independently selected materials.

Personal Characteristics

Students who will be successful in this problem-based, inquiry-driven learning environment must be self-motivated, risk-taking, questioning, perceptive, and capable of communicating their research process and conclusions in a well-reasoned, coherent manner to a variety of audiences. Essays on specific topics will allow reviewers insights in the maturity and preparedness of applicants for this program. The selection process will include evaluation of students' timed and controlled responses to prescribed essay questions.

Sample Application and Timeline

A sample application with criteria is provided for review in Appendix N. Applications will be evaluated annually to determine the effectiveness of the individual elements. A part of the application's evaluation process is the student's success in the program.

Applications will be modified as needed; however, once an application has been released to the public for submission for selection of student, no changes shall be made to it during that established timeline for submission. Timelines for the submission of application, testing, and submission of other elements may not be shortened once they have been approved by the regional governing board, posted on the GS@IP Web page, or distributed through the participating school divisions.

VII. Administration

Administration Subcommittee

The administrative subcommittee was composed of principals from high schools in the three localities, counselors from Manassas City and Manassas Park City, and representatives from George Mason University. Those members worked through the following requirements:

- Administration and Staff
  - Staff Allocation
  - Credentials and Qualifications
  - Recruitment
- Advisory Committee(s)
- Calendar
- Code of Conduct
- Evaluation
- Facilities
- Fiscal Agent
  - Insurance Verification
  - Memorandum of Understanding (MOU) with GMU
  - Required Material and Equipment Support
- Grading Process
- Transportation

Administration and Staff

Staffing Allocations

The staff and administration required to support the initial program design will include the following personnel:

- Director
- Administrative Assistant
- Biology Teacher
- Chemistry Teacher
- Physics Teacher
- Mathematics Teacher

In order to ensure the successful and efficient opening of the program in September 2010, the executive committee supports the hiring of the director immediately. The recruitment for that position will begin in September 2009, upon the approval of the proposal by the Virginia Board of Education.

With an initial student population estimated between 75-90 students, the four content teachers would provide instruction along with a teaching director the first year. This level of staffing would equate to a student-teacher ratio in classes of 15:1, as suggested in the Academic-Year Governor's School evaluation criteria. It is imperative that at least one teacher from the core subjects have an engineering and research background.

Credentials and Qualifications

Qualifications for the **program director** include the following expectations:

- Master's degree in educational leadership or curriculum and instruction;
- Endorsements in administration and gifted education or special needs;
- Teaching experience with gifted/high ability students;
- Demonstrated experience working with students on alternative projects, mentorship programs, or independent study proposals;
- Budget and master schedule experience;
- Supervision of instruction experience, evaluation of veteran teachers offering advanced curricula;
- Leadership and communication skills as an ambassador for this program, the ability to write and represent the program effectively;
- Program planning and implementation;
- Experience working with business and industry to develop mentorship opportunities;
- Program monitoring and evaluation; and
- Ability to organize and draw inferences from data.

Qualifications for the **program faculty** include the following expectations as well as those expectations that GMU has for its adjunct instructional staff:

- Master's degree in the content area to be taught;
- Endorsement in gifted education;
- Demonstrated teaching experience with gifted/high ability students;
- Demonstrated experience working with students on alternative projects, mentorship programs, or independent study proposals;
- Demonstrated experience in an integrated curricular design working collaboratively with school-based and nonschool-based resource and personnel;
- Demonstrated experience with problem-based curricula emphasizing research;
- Demonstrated verbal, written, and digital communication skills; and
- Ability to organize and draw inferences from data.

Recruitment

The fiscal agent will be responsible for the recruitment and personnel concerns associated with all staff members. The fiscal agent will prepare all job descriptions in conjunction with the Superintendents' Executive Committee and subsequently with the program director.

Advertisements for the program director's position will be announced through the following media following the approval of the proposal by the Virginia Board of Education in September 2009:

- *Washington Post*
- *Education Week*
- Manassas City, Manassas Park City, and Prince William County Public School divisions, George Mason University, and Governor's School Web sites
- National Association for Gifted Children
- Association for Supervision and Curriculum Development
- Virginia Association for Supervision and Curriculum Development
- Virginia Association of Secondary School Principals

The Superintendents' Executive Committee will organize interviews, inviting membership from subcommittee chairs and co-chairs. If necessary, the interview committee will select two or three finalists and will forward those names to the executive committee for final interviews.

The program director will participate in job fairs as part of the recruitment efforts and will work in conjunction with the Prince William County Public Schools Office of Human Resources to ensure that all documents needed for the hiring of faculty and staff are properly prepared and that timelines are followed appropriately. All positions will be posted in three feeder division human resources offices.

Timeline for Hiring Program Director	
September 2009	Advertisement of position
October 2009	Application cut off
November 2009	Applicant screening
December 2009	Recommendation forwarded to Manassas City, Manassas Park and Prince William County Public School Boards for approval
January 2010	Director begins work at George Mason University-Prince William Campus

Advertisements for the program faculty positions will be announced through the following media following the approval of specific job descriptions by the Superintendents' Executive Committee:

- *Washington Post*
- *Education Week*
- Manassas City, Manassas Park, and Prince William County Public School division, George Mason University, and Governor's School Web sites
- National Association for Gifted Children
- Association for Supervision and Curriculum Development
- Virginia Association for Supervision and Curriculum Development
- Virginia and national associations for science, mathematics, problem-based curriculum, and mentorship endeavors

Staffing allocations for subsequent years will be determined by the Superintendents' Executive Committee with approval made by the regional governing board.

Advisory Committee(s)

Formulated to mirror a principal's advisory committee, the program advisory committee will initially meet quarterly and serve in an advisory capacity to the Governor's School. The committee does not have decision-making capacity.

The members of the advisory committee shall include representatives from the following stakeholders (organizational responsibilities)

- Director (chair)
- George Mason University Administrative coordinator and/or curriculum coordinator (GMU's interests)
- Deputy and/or assistant superintendents for curriculum and instruction (program continuity within divisions)
- Curriculum specialists representing science, technology, engineering, and mathematics, (content integrity)
- Directors/supervisors of gifted education (instructional integrity)
- Guidance counselors (home base high school liaison)
- Parent (parental perspectives)
- Student (student perspectives)
- Business Representatives (business/ industry perspectives)

The program director will have the authority to reorganize the advisory committee format to maximize its effectiveness. While the membership may be expanded as the program changes over time, the initial membership must be included in any subsequent reorganization.

Calendar

In an effort to maximize the program director's time in the first year of the program's operation, the administrative subcommittee recommends that the GS@IP follow the school calendar of the fiscal agent, Prince William County Public Schools.

While some holidays overlap across the three divisions and with George Mason University, not all holidays or other special activities days align. For that reason, the Academic-Year Governor's School calendar for 2010-2011 will be adopted when the Prince William County Public Schools' calendar is approved by its school board. Contracts for employees for the GS@IP will be written to reflect fall, winter, and spring breaks as well as teacher professional development days for the county.

Subsequent calendars for GS@IP will incorporate the array of Advanced Placement, Cambridge, International Baccalaureate, and Standards of Learning assessment/testing schedules for the three divisions. All student applications, other printed information, and the GS@IP Web page will reflect that students are expected to attend classes in alignment with Prince William County school openings and closing, regardless of the calendar/closing of their school divisions.

Code of Conduct

In an effort to maximize the program director's time in the first year of the program's operation, the administrative subcommittee recommends that the GS@IP adopt the Code of Conduct for students from the fiscal agent, Prince William County Public Schools. Students will be informed that while on buses from their respective school divisions, their respective Codes of Conduct are in effect.

Subsequent revisions to the Code of Conduct shall be reviewed by the executive committee, prior to approval by the regional governing board. The Code of Conduct shall be included as an element of the evaluation of the program.

Daily Schedule

Both the members of the ID and the administrative subcommittees were involved in discussions with staff from GMU regarding the most advantageous daily schedule for the GS@IP students. GMU staff recommended that the GS@IP students attend classes in the morning, when more classrooms and laboratories were available. With that in mind, the ID subcommittee developed the following weekly schedule as the skeleton around which more detailed planning could proceed once the director and faculty were hired. Table 3 indicates the arrangement of classes to meet the expectations outlined in the program and curricular design. →

Table 3: Weekly Schedule of Classes

Period	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Period 1 105 minutes 7:30 – 9:15	Science/Math	Juniors - Mentorship Day	Juniors – RAI-I	Science/Math	Science/Math
Break 9:15 – 9:30					
Period 2 105 minutes 9:30 – 11:15	Math/Science			Math/Science	Math/Science
Service Learning	90 minutes per week				

The two dominant classes would be periods 1 and 2, both 105 minutes in length. Science teachers felt this was adequate time to present concepts and to utilize the appropriate technology and laboratory settings. Tuesdays and Wednesdays would be devoted to either mentorship activities at area businesses or industries and more focused, concentrated research within the RAI-I class where their science and mathematics knowledge and skills will be integrated into applied engineering and technology-based research. On those days, all teachers would be engaged in observations of students at their mentorship sites or would be working with small groups supporting their research in GMU laboratories, supervising field-based research, or in other research-related endeavors. All students would be required to document 90 minutes of service learning per week through logs and reports to the RAI-I teacher.

With this schedule, students in the GS@IP are in active, accelerated learning for more than 19 hours of the 27.5 contact hours offered in Virginia high schools. GS@IP will spend 69 percent of their school week in programs developed singularly for their intellectual needs.

Evaluation

In an effort to maximize the program director's time in the first year of the program's operation, the administrative subcommittee recommends that the GS@IP adopt the instructional personnel evaluation for the fiscal agent, Prince William County Public Schools.

The program director will submit to the Superintendent's Executive Committee evaluation documents, including pre-planning forms, mid-year evaluations, and final evaluations in accordance with the timeline issued by the Office of Human Resources.

Subsequent revisions to the instructional personnel evaluation process shall be reviewed by the executive committee, prior to approval by the regional governing board. Those revisions may include provisions to evaluate veteran teachers through alternative methods. Such alternatives may include longitudinal projects that incorporate data collection; as well as leadership in program evaluation, community-based instructional programs, curriculum development, and professional development.

The program director will develop an annual evaluation process that will seek information and data to monitor the program's effectiveness. That process will include the collection of data regarding the quality of the instructional design, the curriculum, the instructional staff, and the supporting components – mentorship, field research, and service learning. Data will be collected from all stakeholders who are included as members on the advisory committee as well as staff and faculty of the three school divisions, George Mason University, mentors, and service learning contacts.

Benchmarks for the evaluation of the program will be drawn from the Academic-Year Governor's School Evaluation Rubrics, available from the Virginia Department of Education, as well as elements from the National Consortium of Specialized Secondary Schools for Mathematics, Science, and Technology and other evaluation criteria from accelerated programs for gifted students.

Summary data and conclusions as well as recommendations for programmatic changes will be presented annually to the executive committee and the school boards of the three participating divisions as part of the program director's annual report. This information will also be provided to other audiences as deemed appropriate by the executive committee.

Facilities

Based on information from the ID subcommittee, the administrative subcommittee provided George Mason University with an outline of the amount and kinds of space needed to support the program in the first year. During the first year, 2010-2011, classes will be split between the Occoquan and Bull Run buildings. The following spaces are available at the GMU-PWC for the first year of the program:

- Office space for the director, an administrative assistant, four to six instructional staff
- Four classrooms with built in LCD, laptop/ Internet connections, supporting digital and video technologies, and technology access for students' laptops at their desks;
- One wet-prep laboratory and one dry-prep laboratory;
- Computer laboratory access as GMU students through the open laboratories for all students as well as in each classroom; and
- Storage space will be allocated within existing laboratories and in the office space.

In 2011 and subsequent years, the program will have access to additional classroom and laboratory space as another building in the adjacent Innovation Park opens. At that time, additional classrooms, laboratories, and storage areas will be assigned to the GS@IP.

Fiscal Agent

The Executive Committee of the planning committee designated Prince William County Public Schools as the fiscal agent to receive the planning grant authorized by the 2008 General Assembly. In subsequent discussions, it was agreed that the county would continue to function as the fiscal agent for the Academic-Year Governor's School. A formal agreement indicating the relationship among the three school divisions and George Mason University is included in Appendix F.

As the fiscal agent, Prince William County will secure all needed insurance and documentation. All budgetary issues and procedures will follow Prince William County Public Schools' timeline and specifications. In all areas of the budget, Prince William County Schools' personnel will oversee the activities of the program director and all areas of the GS program at George Mason University.

In February 2009, the school boards of Manassas City, Manassas Park City, and Prince William County signed an agreement outlining their commitment to participate in and fund the operation of the GS@IP. In fiscal year 2010, all three school divisions have allocated funds in their budgets to support the administrative costs of hiring and equipping the director. The signed memorandum of understanding establishes Prince William County Public Schools as the fiscal agent of the program.

Following approval by the Virginia Board of Education, the fiscal agent will sign a memorandum of understanding (MOU) with George Mason University that will define the following terms:

- Facilities to which the GS@IP have sole use;
- Classrooms, laboratory space, storage space, and other meeting space that the GS@IP will share with other GMU faculty, staff, and students and the expectations that govern shared space;
- Required equipment and materials
  - Computers for faculty and staff
  - Laptops for students
  - Phone
  - Fax machine
  - Copier
  - Office Furniture (desks, chairs, file cabinets, etc.)
  - Office Supplies (ink, toner, paper, etc.)
  - Server for e-mail and/or network
  - Textbooks
  - Shared lab equipment (beakers, laboratory burners, etc.)
  - Miscellaneous
- Student access to support facilities such as the library, computer laboratories, field sites, etc.;
- Student and staff parking arrangements;
- Student and staff designation as GMU students and staff;
- Cost for dual enrollment hours credit and transcripts;
- Access and reporting expectations for grades for dual enrollment classes;
- Articulation between high school and GMU course credits;
- Provisions for the safety and security of students under the age of 18 on the GMU-PWC campus; and
- Ancillary support (Web site, technology, resources, supplies, equipment, maintenance, and custodial support) that will be provided by the University for the GS@IP.

Grading Process

Governor's School courses will be graded on a numeric scale with scores ranging from 0-100. Semester scores will be reported numerically to the school divisions and converted to the corresponding letter grade and grade point equivalency used in each respective division. The determination of whether the Governor's School courses will carry weighted credit will remain a local decision.

For purposes of the GMU transcript, all semester grades will be reported using the existing corresponding letter grade and grade point equivalency in practice at the time the courses are taken. All decisions regarding grade point averages for courses reported on the GMU transcript remain under the auspices of the Board of Visitors of George Mason University.

Transportation

Transportation will remain the responsibility of the individual school division. Both Manassas and Manassas Park will provide transportation for their students from Osbourn and Manassas Park High Schools, respectively. Students will arrive at their high schools in time to be transported to the GMU-PWC.

Manassas and Manassas Park school divisions have developed contingency plans to transport each other's students in a variety of situations.

Prince William County Public Schools will provide transportation for its students through one of the following options:

- From their home base high schools using existing bus routes;
- From their home base high schools using student transportation; or
- From express stops for specialty programs.

Student transportation to and from mentorship endeavors will be the responsibility of the student and his or her parents. Support will be provided to arrange carpools for students at the same mentorship sites. Students for whom transportation to mentorship sites cannot be provided by parents or through carpooling arrangements will be given priority assignment to mentorship sites within close proximity to the GMU-PWC campus or at sites adjacent in Innovation Technology Park. This was discussed in several planning sessions by various subcommittees. (See Appendix O.)

VIII. Community Relations

The Community Relations subcommittee served as the spokesperson for GS@IP during the planning process. The co-chairs of the subcommittee hold positions within GMU and PWC that establish them as community resource contacts.

The focus of the Community Relations subcommittee was to speak to a wide variety of potential stakeholders about the GS@IP. By communicating with potential stakeholders throughout the planning process, the subcommittee sought to strengthen the prospective involvement and participation among the communities the program will serve. Among the groups that received information about the GS@IP are CORE2 (Consortium of Regional Employers and Educators), Speak Up Manassas Toastmasters, Prince William County Greater Manassas Chamber of Commerce, Manassas Rotary Club, Leadership Prince William and companies such as Micron, Aurora Flight Sciences Corporation, and Lockheed Martin. In addition, the Prince William County Greater Manassas Chamber of Commerce dedicated one of its Insight Series evening meetings to the topic of the Regional Governor's School to help get more information out to the community. (See Appendix P.) At this March 5, 2009 meeting, parents, students, and other interested persons provided important suggestions and comments regarding the critical aspects of the proposed program. (See Appendix Q.)

Several articles have appeared in regional publications about the GS@IP. The subcommittee developed an initial brochure for parents, students, and other interested parties in the three school divisions. Copies of the articles and brochure are included in Appendix R.

The Web site for GS@IP will be a part of the CAPSTONE project, sponsored by the instructional technology department of GMU. Through CAPSTONE, seniors create a Web site for an area nonprofit organization that meets its specific needs and purposes. While it is still under development, the Web site will serve as a major communication vehicle for the GS@IP. The design template can be seen in Appendix S.

In an attempt to involve students from the three school divisions into the planning process, a logo/name contest was held. The planning committee made the final selection for the logo (See Appendix T.) The executive committee and superintendents selected the name for the GS@IP which was presented for approval by each of the school boards.

The Community Relations subcommittee agendas and minutes may be found in Appendix U.

The Community Relations subcommittee collected petitions and letters of support from area business, industry, and civic organizations. (See Appendix V.)

IX. Proposed Budget

Each school division has committed to provide start-up funds for hiring a Director in January 2010. The planning committee proposed the January hiring so that there is sufficient time for hiring staff and working with George Mason to assure the facility and curriculum are ready for students. The proposed budget for start-up is included in Appendix W.

Based on a projected total enrollment of 75-90 eleventh-grade students from three participating school divisions, the proposed budget for 2010-2011 is included in Appendix X.

X. School Division's Assurances of Support

Table 3: Initial School Division Student Membership

School Division	Year One	Year Two	Year Three
Manassas City	10	20	25
Manassas Park City	5	10	12
Prince William County	60-75	120-150	130-160
Total	75-90	150-180	167-197

Each school division has committed to the GS@IP for an initial three-year period. The table above reflects the number of students projected to participate in the GS@IP for the first year, 2010-2011 as 11th graders. In years two and following, the student population will include juniors and seniors.

XI. Conclusion

The appendices provide complete documentation to support this proposal. The three school divisions, Manassas City, Manassas Park and Prince William request your immediate consideration and approval of this proposal for the GS@IP for opening in the fall of 2010, as a five-sixth day continuous program pending legislative financial support.

Appendices

A.	Planning Grant Information
B.	Consultant Information
C.	Master Timeline
D.	Roster of committee members and minutes
E.	Committee Roles and Responsibilities
F.	Governance Agreement
G.	Core Values
H.	Instructional Design Subcommittee Minutes
I.	Graphic Overview of Concepts, Skills, Applications Integration
J.	Engineering Concepts Crosswalk
K.	Course Outlines
l.	Chart for Dual Enrollment
M.	Gifted Resolutions
N.	Student Application
O.	Administration Subcommittee Minutes
P.	Insight Series Information
Q.	March 5, 2009 Participant Feedback
R.	Articles and Brochures
S.	Web Site
T.	Logo Contest
U.	Community Relations Subcommittee Minutes
V.	Petitions and Support Information
W.	Start-Up Budget
X.	Proposed Budget for 2010-2011
Y.	Works Cited