GEORGE MASON UNIVERSITY
Graduate Council

NEW Certificate, Concentration, Track or Degree Program
Coordination/Approval Form

(Please complete this form and attach any related materials. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. If no coordination with other units is required, simply indicate “None” on the form.)

Title of Program/Certificate, etc: PhD in Health Services Research and Policy

Level (Masters/Ph.D.): PhD

Please Indicate: ___ X ___ Program ______ Certificate ______ Concentration _____ Track

Description of certificate, concentration or degree program:
Please attach a description of the new certificate or concentration. Attach Course Inventory Forms for each new or modified course included in the program. For new degree programs, please attach the SCHEV Program Proposal submission.

Please list the contact person for this new certificate, concentration, track or program for incoming students:

Farrokh Alemi, PhD

(703) 993-4226

Approval from other units:

Please list those units outside of your own who may be affected by this new program. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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<tr>
<th>Unit:</th>
<th>Head of Unit’s Signature:</th>
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Submitted by: _____________________________________________ Email: 

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Graduate Council approval: _________________________________ Date:

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Graduate Council representative: ___________________________ Date:

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Provost Office representative: ______________________________ Date:

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**STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA**  
Program Proposal Cover Sheet

<table>
<thead>
<tr>
<th>1. Institution</th>
<th>George Mason University</th>
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| 2. Program action (Check one): | Spin-off proposal  
New program proposal  __X__ |
| 3. Title of proposed program | Ph.D. in Health Services Research and Policy |
| 4. CIP code | |
| 5. Degree designation | Ph.D. |
| 6. Term and year of initiation | Spring 2006 |
| 7. Term and year of first graduates | Spring 2010 |
| 8. For community colleges: date approved by local board | |
| 9. Date approved by Board of Visitors | |
| 10. For community colleges: date approved by State Board for Community Colleges | |
| 9. If collaborative or joint program, identify collaborating institution(s) and attach letter(s) of intent/support from corresponding chief academic officers(s) | Not applicable |
| 10. Location of program within institution (complete for every level, as appropriate). If any organizational unit(s) will be new, identify unit(s) and attach a revised organizational chart and a letter requesting an organizational change (see Organizational Changes--hotlink). | School(s) or college(s) College of Nursing and Health Science  
Campus (or off-campus site) Fairfax  
Distance Delivery (web-based, satellite, etc.) |
| 11. Name, title, telephone number, and e-mail address of person(s) other than the institution’s chief academic officer who may be contacted by or may be expected to contact Council staff regarding this program proposal. | Farrokh Alemi, Ph.D., Acting Assistant Dean, 703-993-1929 falemi@gmu.edu |
Ph.D. in Health Services Research & Policy

Submitted by the College of Nursing and Health Science
George Mason University

April 2005
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Description of Proposed Program

The Health Services Research and Policy Program is a new proposed doctoral program at George Mason University. The purpose of this program is to prepare Health Services Researchers and Health Policy Analysts/Consultants for a wide range of academic, public policy and health service settings.

While this degree program will be a new offering at GMU, it is a well established, specialized professional degree that serves a number of disciplines and fields of application and inquiry in the health sector. Thirty five such programs exist in United States and Canada.¹ Health Services Research is a "multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations."²

A succinct statement about the role of health services research and policy in United States today is provided by the testimony to Congress:³

“By evaluating the effectiveness of health care and the ability of the health care system to deliver these services efficiently, health services research aids in the transfer of science from the laboratory into practical use by physicians and hospitals -- essentially speeding the integration of biomedical research into patient care and disease prevention. Health services research also plays a critical role in educating consumers and purchasers about the care they receive, serving as a resource not just for disease treatment and prevention information, but also providing information, such as quality data for health plans, that enables consumers to better choose their health care. Furthermore, by examining the impact of the delivery and financing of health care on access and quality, health services research provides the evidence needed by policymakers to better determine health care priorities, particularly among vulnerable populations and within the Federal health Medicare and Medicaid programs.”

² This definition was approved by the Association for Health Services Research (AHSR) Board of Directors in June 2000.
³ Congressional testimony, Statement of the Association for Health Services Research to the Subcommittee on Labor, Health and Human Services, Education and Related Agencies, Committee on Appropriations, United States House of Representatives, Presented by Jack Hadley, Ph.D., Professor of Health Services Research, Georgetown University Institute for Health Care Research and Policy, February 5th 1998.
The field of health services research has evolved from practice disciplines associated with health administration, medicine and public health. It has evolved from “dissatisfaction with the clinical conduct of medicine, as practiced and taught at leading medical centers, and with the traditional intellectual content of more socially and publicly oriented fields, such as public health and hospital administration”. Health services research and policy is critical to integrating new advances in technology, science and medicine into clinical practice, care and service.

**Goal of the Program**

The goal of the Doctorate in Health Services Research and Policy is to prepare health professionals who can lead the design and analysis of public and private health policy and conduct health services research that serves practical applications in health policy, health systems management, public/population health science and health technology management. Graduates are needed for a wide variety of roles in public and private health care, public policy, health related science and technology research enterprises and businesses. The expectation is that graduates may work for federal and state public health policy organizations, health related non-governmental organizations, health care service organizations, consulting firms and, biotechnology research and development enterprises. Graduates may also be employed in traditional academic positions in higher education.

**Overall Program Objectives**

The overall (general) objectives of the Ph.D. program in Health Services Research and Policy is to produce practicing researchers, scholars, and policy analysts etc. who have the following competencies:

- Ability to understand, analyze, design, execute, and evaluate research and practice in the health system and health sciences, with particular in-depth understanding in the individual’s area of specialization;
- Ability to understand, analyze, design, and evaluate health data systems and information technology;
- Ability to translate research knowledge and principles into health policy analysis health systems management;
- Ability to continually examine current and future changes in the health system from an interdisciplinary perspective;
- Demonstrated knowledge and understanding of ethnic issues and cultural diversity as they relate to health services management, research and policy.

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**Unique Characteristic**

Like other programs in the nation, the proposed program in health services research and policy emphasizes rigorous preparation in research and public health policy evaluation methods as well as the management of health related organizations. The program of study includes courses/content in biostatistics, data management, clinical epidemiology, survey design, program evaluation, policy analysis quality management, health policy, applied economics and decision sciences. What will make our program unique among other programs in health services research, health administration and health policy programs is an emphasis on interdisciplinary applications in information technology and data analysis to support public health management and health policy development. This is evident, for example, in a core set of courses required from all applicants on database design and use.

In 2000, the Agency for Healthcare Research and Quality (AHRQ) and the National Library of Medicine (NLM) brought together more than 100 educators in a workshop titled “Medical Informatics and Health Services Research: Bridging the Gap.” The workshop focused on the need to prepare investigators who can work on both medical informatics and health services research. A summary of the workshop results have been published in the Journal of American Medical Informatics Association. The workshop recognized that as ever-more-massive data sets become available, health services researchers and policy analysts need to know more about using healthcare data, data base structures and data mining techniques. Our program is designed to fill the gap that this important workshop of educators has identified.

We will not only prepare our Ph.D. students to address typical health services research areas but also provide them with background in the design and use of healthcare databases. In particular, we provide them with skills in data modeling, database design, integration of health information systems, an understanding of the confidentiality and security of data, Standard Query Language for database analysis, and the linkage between information systems and decision sciences. Additionally, GMU graduates will have in-depth understanding of the health policy making process (state and federal), health systems management and the factors affecting health service delivery and public health outcomes, as well as the use of data to inform policy and management decisions. The knowledge and skills HSRP graduates will possess follows recommendations from the Institute of Medicine for Medical Informatics and also for Public Health, Patient Safety and Evidenced Based Medicine in the future. This increased knowledge and skills among our graduates will enable them to improve cost, quality and access to health services and seek ongoing opportunities for system safety and efficiency.

**Why Us, Why Here?**

Since its inception in 1979, the College of Nursing and Health Science (CNHS) at George Mason University has been a leader in developing innovative academic programs. The College serves the needs of the region related to the health workforce: nurses, health service managers and researchers, and public health policy analysts/advisors. Among

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6 Corn M, Rudzinski KA, Cahn MA  Bridging the gap in medical informatics and health services research: workshop results and next steps. J Am Med Inform Assoc. 2002 Mar-Apr; 9(2): 140-3.
these are graduate and undergraduate programs in Health Systems Management and Health Science. In addition to academic programs, the CNHS is home to the Center for Health Policy, Research and Ethics (CHPRE). Since its establishment in 1989, CHPRE has evolved into an academic research and service center providing technical assistance and consulting services such as seminars, policy forums, policy briefs and position papers, policy evaluations and health services research to a wide variety of public health policy and health service entities. Much of its work is centered on communication, information dissemination and coalition building on health policy-related dilemmas and advances, health system management and service planning/delivery, leadership training, and education for political activism/participation and system improvements. The graduate faculty in Health Systems Management and CHPRE exposes students and working health professionals to research and health policy work through research projects, seminars, internships, employment, and volunteer work. For the past four years, CHPRE has conducted educational institutes for Congressional staff about a variety of health care issues. Besides traditional research on health service and workforce issues, the faculty is actively involved in emerging areas of concern/opportunity in health services research and policy, such as information security and individual/data privacy and security. Appendix A lists current faculty who will be involved with the new Ph.D. program. Appendix B summarizes the research and consultation activities in which the faculty have recently engaged. Appendix C lists George Mason University patents and publications in the field.

**Current CNHS/GMU Degree Programs: Unmet Need for Health Service Research and Policy Doctorate**

Currently, the CNHS offers programs of study for nurses from baccalaureate programs through doctoral programs. The Nursing Ph.D. is not available to non-nurses. The growing number of graduates from the MS in Health Systems Management (offering concentrations in Executive Management, Assisted Living, Health Information Systems and Health Policy) has no option for students who wish to obtain a terminal degree in their field.

While a Ph.D. in public policy is available from the School of Public Policy at George Mason University, it does not address the specialized focus or depth of knowledge and skill required in applied Health Services Research. Indeed, the CNHS and the Center for Health Policy, Research and Ethics has a long-standing working relationship with the School of Public Policy, providing courses and faculty for student advisement and dissertation committees. These programs are not viewed as duplicative or competitive as they serve students who have different career objectives.

The career ladder for health service researchers nation-wide is not through Public Administration or Public Policy Programs. Rather it is through professional programs in the applied health professions (Public Health or Health Administration). The table that follows illustrates where this degree is housed in five of the 25 programs in universities across the US (no programs are found in Public Administration or Public Policy programs).
Table 3. Ph.D. Programs in Health Services Research, and Health Policy

<table>
<thead>
<tr>
<th>Name of Ph.D. Program</th>
<th>University</th>
<th>College or School</th>
<th>Department</th>
<th>Internet Site</th>
<th>Public Policy linkage</th>
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<tbody>
<tr>
<td>Administration-Health Services and Research</td>
<td>University of Alabama</td>
<td>School of Health Related professions</td>
<td>Joint by School of Management, School of Business, and Dept. of Health Services Administration</td>
<td><a href="http://main.uab.edu/show.asp?durki=33491">http://main.uab.edu/show.asp?durki=33491</a></td>
<td>No relation with public policy major</td>
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<td>Health Policy and Administration</td>
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<td></td>
<td><a href="http://www.wsu.edu/~gradsch/iidp.htm">http://www.wsu.edu/~gradsch/iidp.htm</a></td>
<td>No linkage</td>
</tr>
<tr>
<td>Health services Research</td>
<td>University of Florida</td>
<td>College of Public Health and health Professions</td>
<td>Dept. of Health Services Research, Management and policy</td>
<td><a href="http://www.phhp.ufl.edu/hspm/Ph.D./index.html">http://www.phhp.ufl.edu/hspm/Ph.D./index.html</a></td>
<td>No linkage to public policy</td>
</tr>
<tr>
<td>Health Services Organization and Policy</td>
<td>Virginia Commonwealth University</td>
<td>Dept of Health Administration</td>
<td></td>
<td><a href="http://www.had.vcu.edu/files/Ph.D..pdf">http://www.had.vcu.edu/files/Ph.D..pdf</a></td>
<td>No linkage</td>
</tr>
<tr>
<td>Health Services Organization and Policy</td>
<td>University of Michigan</td>
<td>School of Public Health</td>
<td></td>
<td><a href="http://www.sph.umich.edu/hmp/programs/Ph.D.-hsop.html">http://www.sph.umich.edu/hmp/programs/Ph.D.-hsop.html</a></td>
<td>No linkage</td>
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</tbody>
</table>

GMU students interested in a career in health services research and policy must either attend costly private schools outside of Virginia (few are available), or apply to a similar program at VCU in Richmond. Unfortunately, the VCU program currently has many more applicants than it can admit. Additionally enrollment in VCU would require a significant commute from Northern Virginia, which is usually not feasible for working professionals. The alternative is for students to pursue a Ph.D. in another field, where only some of the content is relevant.

**Program Requirements**

The Ph.D. in Health Services Research and Policy is a 72 credit academic program. Of the total credit requirements, at least 42 credits are from doctoral level courses and up to 30 credits may come from appropriate master’s level course work from GMU or from another graduate degree program as approved at the time of admission. Students admitted without a graduate degree may elect to apply graduate course work towards meeting the requirements of the M.S. degree in Health Systems Management with a concentration in Health Policy or Health Information Systems.

The overall Ph.D. program of study (course) requirements is explained in the section that follows. Courses are listed under four required areas of the curriculum: Research Methods Core and Electives, Database and Information Systems Core and Electives, Health Services and Policy Core and Electives, and Dissertation Sequence Courses.

**Research Methods Core Courses (21 credits)**

Students must take the following six courses:

1. HSCI 799 Advanced Quantitative Analysis for Healthcare Research
2. HSCI 800 Advanced Quantitative Data Analysis for Healthcare Research
3. HSCI 801 Advanced Multivariate Statistics and Data Analysis in Healthcare Research
4. HSCI 712 Epidemiology and Health Services Research
5. HSCI 726 Advanced Seminar in Epidemiology
6. HSCI 920 Qualitative Research in Nursing and Health Care

Students must select with approval of their advisor/committee chair at least one course from the following courses:

7. STAT 574 Applied Statistics
8. STAT 665 Categorical data analysis
9. STAT 668 Survival analysis
10. Advanced courses through the School of Public Policy, or the Department of Applied and Engineering Statistics in the School of Information Technology and Engineering or equivalents

Database and Information Systems Core Courses (9 credits)

Students must take the following required courses:

1. HSCI 720 Data Integration
2. HSCI 709 Health care databases

In addition, students must select one course among the following with the consent of their advisor/dissertation committee chair:

3. HSCI 722 Electronic Commerce and Online Market for Health Services
4. HSCI 740 Management of Health Information Systems
5. Advanced courses through School of Information Technology and Engineering or equivalents

Health Service and Policy Core Courses (27 credits)

Students must take the following required courses:

1. HSCI 730 Decision Analysis in Healthcare
2. HSCI 866 Health Care Public Policy
3. HSCI 525 Risk Analysis in Health and Biosciences

In addition, students select six of the following courses with the consent of their advisor/dissertation committee chair:

4. HSCI 547 Health Care Regulation
5. HSCI 745 Health Care Security Policy
6. HSCI 750 Health Care Management Policy, Law, and Ethics
7. HSCI 715 Health Economics
8. HSCI 746 Advanced Seminar on Security
9. HSCI 727 Program Evaluation
10. PUBP 700 Theory and Practice in Public Policy
11. PUBP 762 Social Institutions and Public Policy
12. Up to 2 advanced courses (6 credits total) from other GMU/Consortium programs in areas such as Economics, Public Policy, Information technology/engineering, Statistics, Public Health or Adult Education.

**Dissertation Sequence Courses (15 credits or more)**

1. HSCI/NURS 994 Nursing/Health Science Research Seminar (new cross listing)
2. HSCI 998 Doctoral Dissertation Proposal (new, 3+ credits)
3. HSCI 999 Doctoral Dissertation (new, 3+ credits)

Students will take electives in subject matter and research methods that support their research interests.

Course descriptions are provided in Appendix D.

Table 1 depicts the program of study pathways that might apply to students with different academic backgrounds and identifies what courses may be accepted when the applicant has an earned (relevant) Masters degree:

**Table: 1 Ph.D. in Health Services Research & Policy Program of Study Pathways**

<table>
<thead>
<tr>
<th>One course from the list</th>
<th>Applicants Admitted with BS</th>
<th>Applicants Admitted with HSM Specialization in Health Policy</th>
<th>Applicants Admitted with HSM Specialization in Information Systems</th>
<th>Applicants Admitted with MS in Epidemiology and Biostatistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI 799</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0</td>
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<tr>
<td>HSCI 800</td>
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<td>0</td>
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<tr>
<td>HSCI 801</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0</td>
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<tr>
<td>HSCI 712</td>
<td>3</td>
<td>0</td>
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<td>HSCI 726</td>
<td>3</td>
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<td>HSCI 720</td>
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<td>3</td>
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<td>3</td>
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<tr>
<td>HSCI 709</td>
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<tr>
<td>HSCI 722</td>
<td>3</td>
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<tr>
<td>HSCI 740</td>
<td>3</td>
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<tr>
<td>One course from the list</td>
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<tr>
<td>HSCI 730</td>
<td>3</td>
<td>3</td>
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<tr>
<td>HSCI 866</td>
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<td>HSCI 525</td>
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<td>HSCI 547</td>
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<td>Six courses</td>
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<tr>
<td>HSCI 745</td>
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**Evaluation of Student Outcomes**

While overall program objectives were presented previously, specific learning objectives expected of students completing the requirements of the PhD in Health Services Research and Policy (program terminal objectives) are identified for four competency areas: Database and Information Systems, Health Services Research, Health Policy, Specialty/Field of Interest; and Oral/ Written Communication. The methods for evaluating student learning are described for each.

**Database and Information Systems Learning Objectives:**

Students will the knowledge and skill to work with data from a variety of data formats/structures and integrate data from a variety of sources for a wide array of research, policy evaluation and management functions/applications. Evaluation will be based on successful completion of the Database and Information Systems Core courses and other applied data/information management courses as specified in the individual program of study; and by successfully passing the comprehensive examination.

**Health Services Research Learning Objectives:**

Students will possess the following functional research competencies:

Students will have graduate-level competence in applied statistics, Social and Behavioral Sciences, and Health Systems Management (including Health Policy and Information Management). Preparation will be assessed based on completion of prior graduate level coursework (accepted MS degree and courses as determined at the time of admission), or by completing required graduate level statistics courses from the Health Systems Management program.

Students will assess public health system problems and apply advanced inferential statistics, epidemiological and biostatistical techniques to interventions in order to identify effective health systems practice and policy decision making; analyze quantitative data; and design public health, management and policy studies (including sampling and hypothesis testing). Evaluate research tools, research design, statistical...
analysis, data collection instruments and measurement systems. Evaluation will be based on successful completion of Research Core courses and the individual comprehensive examination.

Students will attain the skills necessary to conduct doctoral level research that involves a problem-based inquiry in their specialty area of interest in public health policy or systems management. Evaluation will be based on successful defense of a dissertation proposal and final dissertation (includes successful completion of research core courses and dissertation sequence courses).

Health Policy Learning Objectives:

Students will have the knowledge, skills and abilities to identify, research, and analyze the critical issues in health policy and health services research that arise in health services organization, delivery and financing, as well as public health practice; present and use health services research and analysis results effectively, practically, and in a manner that is relevant to policy decision-making at all levels of government and health delivery systems; and apply leadership and decision-making skills to national and state public health and health reform efforts. Evaluation will be based upon successful completion of the individualized plan of study, Health Service and Policy Core courses, and successful completion of the comprehensive examination.

Specialty/Field of Interest Learning Objectives:

Students will identify an area of interest within public health policy and/or service delivery systems and develop a level of knowledge that will allow them to use appropriate conceptual or theoretical models and build on the current state of the art in that topic area. They will be able to develop research agendas and questions. Evaluation will be based on successful completion of the student’s individualized plan of study (electives and others) and comprehensive exam.

Oral and Written Communication Learning Objectives:

Students will attain the communications skills necessary to provide effective and cutting-edge leadership in health services research, management and/or policy and practice at the national, state, and local levels. These skills are understood to include the total range of communication venues and modes (including scholarly and practically applied written and oral skills) that are required for health systems research, management and public policymaking in the following functional practice areas: teaching/education; research/inquiry; and leadership/management. Successful completion of the student’s individualized plan of study (electives and Policy, Service Core courses), comprehensive exam and successful dissertation defense will evaluate student learning in this area.

Admission Requirements

1. Applicants must have earned a Bachelor of Science degree from an accredited program in a field relevant to Health Services Research and Policy.
2. Applicants with a Master of Science degree from an accredited program in a field relevant to Health Services Research and Policy may request and if approved receive
credit for up to 30 graduate level credits for comparable courses required in the doctoral program (see matriculation pathway).

3. A minimum grade point average of 3.25 on a 4.0 scale in prior Master of Science course work or 3.5 out of 4.0 in prior Bachelor of Science course work is required.

4. A minimum TOEFL score of 230 is required for English as a second language and international students.

5. A curriculum vita including an up-to-date employment history, list of publications, awards, grants submitted and grants received to date by the applicant is required.

6. Two letters of recommendation from professional and academic sources are required.

7. A one-page statement of career goals is required. The statement of goals will be evaluated by the admission committee to ascertain fit between career goals and faculty research interest. Faculty research interests are available online.

**Organization of Dissertation Committee**

The dissertation committee must be organized as soon as possible after admission, but **before finishing 30 credits** of course work in the program. The advisor/dissertation committee chair must approve all course substitutions and changes in the individual program of study. The committee will have a minimum of three and a maximum of five members, at least two of whom will have an appointment in the College of Nursing and Health Science. The Director of the Ph.D. in Health Services Research and Policy approves the student’s requested committee composition.

**Assessment of Student Learning**

Student progress is assessed through an evaluation of course performance, the comprehensive exam, and finally through successful completion of the dissertation and publications.

1. **Comprehensive exam requirements**

The comprehensive examination will determine whether the student has the necessary knowledge and skills to undertake dissertation work. It must be taken within one year of completion of all Core courses (except for dissertation sequence courses). Students shall indicate, by the end of the previous regular semester, their intent to take the exam. Students must have organized a dissertation committee with a chair approved by the program coordinator at the College of Nursing and Health Science. The dissertation committee will develop and evaluate the individual comprehensive exam on a pass/no-pass basis. Students must pass the comprehensive exam to enter Ph.D. candidacy. Students who fail to pass the comprehensive exam may attempt the comprehensive exam again the following semester. No more than one additional comprehensive exam will be permitted.

1.1 **Exam I: Research Methods**

Members of the dissertation advisory team will test the student’s ability to apply concepts of study design, database design, data integration, data analysis, and data interpretation to questions of epidemiology, service delivery or program evaluation.
1.2 Exam II: Specialty Field

Members of the dissertation advisory team will define the content of the specialty field exam to fit closely with the student’s research interest.

2. Dissertation requirements

The objective of the dissertation is to demonstrate that the candidate is able to apply the knowledge gained in the program to the resolution of a concrete and substantial applied problem. It should be:

1. Guided by relevant and current theories or conceptual frameworks;
2. Use appropriate and scientifically rigorous methods;
3. Build on previous research; and
4. Make a new contribution to the field.

Dissertation proposal requirement: The dissertation proposal should be prepared in a format of a funding agency (typically Federal form PHS398). Some pilot data on feasibility must accompany the proposal. The proposal will be presented orally to the dissertation committee and defended in an open session.

Dissertation requirements: The dissertation must be completed within five years after completing the comprehensive examination. If not completed within this timetable, the student may ask for an extension not to exceed another year if he or she presents a reasonable plan for success. Once the dissertation is complete, it must be defended orally in an open session.

3. Publication requirements

The dissertation should be accompanied with a submission for publication of the content of the dissertation to an academic journal acceptable to the dissertation committee. The requirement of submission for publication is waived if the student has already published an article on the subject in an academic journal acceptable to the dissertation committee.

Benchmarks for Success

The program expects to enroll 5 FTE students in year 1, increasing to 10 FTE students by year 3. We expect 90% of graduating students to have a full-time job offer or promotion within 6 months of graduation. We expect that 80% of employers of these graduate students will express their satisfaction with the preparation of the students for employment with their organization.

Relationships to Existing Programs

The Ph.D. in Health Services Research and Policy curriculum utilizes a large number of courses already available through a variety of graduate programs at GMU: It shares courses with the M.S. program in Health Systems Management and the M.S. degree in Epidemiology and Biostatistics in the CNHS. Both degree programs will likely serve as a springboard to entrance into the proposed program. In addition, courses are taken from other academic unit offerings such as the School of Information Technology and Engineering and the School of Public Policy. We expect that students in all courses will
benefit from multidisciplinary input from a diverse class enrollment (program peers and those matriculating from other degree programs). While some courses are utilized across academic unit, the program of study is unique and does not duplicate other offerings. Rather, it makes use of courses from other disciplines where feasible to ensure academic efficiency. This practice is not new or unique to the HSRP Ph.D. program, but is practiced in degree programs across GMU.

Table 5 summarizes two local Dr.P.H. programs that offer concentrations in Health Policy (at Johns Hopkins and George Washington University) and the Richmond based Virginia Commonwealth University Health Services Research Ph.D. Program. This illustrates that there is no available program to serve the needs of Northern Virginia and outside of Public Health programs, no options for programs focusing on Health Services Research and Health Policy.

<table>
<thead>
<tr>
<th>Name of Program</th>
<th>School/College</th>
<th>Program Description and Requirements</th>
<th>Cost and other related information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctorate in Public Health</td>
<td>School of Public Health and Health Sciences</td>
<td>Dr.P.H. with a concentration in Health Policy is a 70 (post Masters degree) credit program that focuses on the policy underpinnings of public health practice and health system organization, structure, financing, and operations with a special emphasis on medically underserved and vulnerable populations. Candidates explore the link between health policy and health services research, which examines how people secure access to health care, as well as the policy and research issues associated with role of public health practice in the twenty-first century.</td>
<td>The tuition is a fixed rate for the entire program For students beginning the program in Fall 2004, the tuition is $62,300.</td>
</tr>
<tr>
<td>Health Services Research</td>
<td>Johns Hopkins/ School of Public Health/ Health Policy and Management Department</td>
<td>Post MPH, this multidisciplinary program includes courses on basic and applied methods to examine the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services to increase knowledge and understanding of the structure, processes, and effects of health services on individuals and populations. Courses include Behavioral and Social Sciences,</td>
<td>Per 9-month academic year full time is $30,960 Per term, full-time students (12+credits) $7,740 Per credit unit, part-time students (1-11) $645 per hr</td>
</tr>
</tbody>
</table>
For additional discussion of this issue see the earlier section titled “Unmet Need in Current CNHS/GMU Degree Programs”.

**Justification for the Proposed Program**

The Ph.D. in Health Services Research and Policy is proposed to respond to demand for a specialized degree that is not currently available in Northern Virginia. A similar degree program is available at VCU (Richmond), but that program is not able to serve the needs of working professionals for advanced graduate studies in this region. This Ph.D. program will address current and future needs in the greater Washington, DC area (Northern Virginia in particular) by creating graduates to work as new faculty in higher education, as health service researchers, policy analysts and health system managers and consultants. An analysis of this need is explained in the next section (student demand). It should be noted that a large percentage of overall employment in Virginia is attributable to Health, Education and Social Services (Figure 1).
Against this backdrop of increasing growth in health care related work, it is important to explore the specific demand for Health Services Research and Policy programs. The field of Health Services Research and Policy has been directly affected by growing funding by the Congress. The lead agency for Health Services Research has had a nearly exponential growth in funding in recent years:8

Academy Health, a professional society that boasts 4,000 individuals and 125 affiliated organizations throughout the United States and abroad, fosters networking and professional growth among health service researchers, managers and policy experts.

From the Directory of Training Programs in Health Services Research and Health Policy, a total of 35 doctoral programs are found in the United States and Canada.\(^9\) The Ph.D. in Health Services Research and Policy will be one of the few programs to focus on health services research and policy with the emphasis on applied research and health information management/data analysis. Local programs in health services research include the Doctorate of Public Health at Johns Hopkins, and Ph.D. programs at Georgetown and George Washington University, none of which have a focus on use of information technology in health services research.

**Student Demand**

We can approximate student demand for the Ph.D. in Health Services Research and Policy by looking at the growth in applications to doctoral programs in the related field of public health. According to the 2003 annual report of the Association of Schools of Public Health, the enrollment in Ph.D. programs has increased from 1481 applicants in 1991 to 4655 applicants in 2003, a growth of 214%.

Another indication of demand for the program by students is past enrollment in courses that are required as program core courses. A good example of these types of courses is HSCI 800 (Multivariate Statistical Data Analysis). In 1999, it had an enrollment of 9 students. In spring 2004, it had an enrollment of 13 students, a 44% increase over 5 years. Another course that indicates the level of interest in Health Services Research is HSCI 712 (Introduction to Health Services Research). This course had an enrollment of 8 students in fall 2000, and 28 people in spring 2004. This is a 250% growth in enrollment of this course over 4 years. Similarly, HSCI 730 (Health Care Decision Analysis) increased from an enrollment of 10 students in summer 2000 to an enrollment of 20 students in spring of 2004, a growth of 100% in five years.

**Employer Demand**

Several indicators point to a strong demand by employers for graduates from the proposed program. Health services researchers command relatively high salaries. According to a nationwide survey conducted by Resneck and Luft in 2004,\(^10\) the median salary of a Ph.D. in Health Services Research or health policy analyst was $99,000. Salaries were highest in the private sector, followed by academic and government settings. Fifty-six percent worked in academic institutions or teaching hospitals, 34 percent in the private sector or foundations, and 10 percent in government.

The number of people hired in this field has grown significantly in the past two decades. If we restrict the search to faculty in clinical departments of medical colleges, the number of Ph.D. faculty in 1999 was 12,141. From 1981 to 1999, excluding Ph.D.s hired in basic research, this number had grown by 106%.

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science clinical departments, the demand for Ph.D.s has grown at the rate of 41 percent.\textsuperscript{11} In a 2002 survey of 125 U.S. allopathic medical schools, the percentage of research non-tenured faculty surpassed the percentage hired on a traditional tenure-track line.\textsuperscript{12} Many of these institutions hire health services researchers to respond to available grant funding.

One indicator of the current supply and composition of health services research can be obtained from membership in the Association of Health Services Research. This association was established in 1981 and in 1994 had about 2000 members. About 1/3 identify themselves as social scientists (mostly economists, sociologists and psychologists), 1/3 as health professionals and 1/3 as public health personnel. The multiplicity of professions and roles among health services researchers indicates nature of the field and the versatility of health services researchers to meet different job requirements is well documented in the literature.\textsuperscript{13}

We expect that individuals who earn the Ph.D. in Health Services Research and Policy will find employment in the region in federal and state agencies, consulting firms, and universities. A good indication of the demand of this region for Ph.D.-prepared individuals is provided by examining the Academy Health Career Center (\url{http://www.academyhealth.org/career/}) job listings. There were 21 jobs listed for health services researchers for the quarter of January 2005 to March 2005. Of the listed jobs for people with a Ph.D. in Health Services Research, 38\% were in the Virginia, DC, and Maryland areas. The positions were in the academic, private and government settings. (See Appendix E for the specific postings.)

Additionally, the demand for health services researchers and policy analysts in the Washington, DC metropolitan area is driven in part by the growing needs of federal agencies for research and evaluation personnel and to meet legislatively mandated objectives. Currently, 15\% of the budget of NIMH, NIDA and NIAAA is legislatively mandated to focus on health services research issues.\textsuperscript{14} As a consequence, almost all the Institutes at NIH have significant research divisions that focus on health services research. These NIH divisions both hire and, through their extramural programs, support the salary of health services researchers at various universities and consulting firms.

Insurers and pharmaceutical firms are also seeking more efficient methods of health delivery and are increasingly hiring health services researchers. For example, health services researchers for example have helped entities in the pharmaceutical industry analyze the cost effectiveness of various medications and prepare applications to the

FDA. A good example of this is MEDTAP International, a firm that was started in 1984 as the Battelle Memorial Institute’s "Medical Technology Assessment and Policy" (MEDTAP) Research Center. By 1995, MEDTAP became a publicly traded company, and today it has offices across the world, including North America, Europe, Asia and the Pacific Rim. MEDTAP focuses on evaluation of cost effectiveness of medications and is an example of a private company where we expect our graduates with Ph.D. in health services research to be employed. MEDTAP has an office in Bethesda, about 20 minutes from George Mason University. More than 25% of the staff of MEDTAP offices in the United States are Ph.D. prepared.\textsuperscript{15}

USAID and other international health care organizations also hire health services researchers to support, manage or conduct projects designed to improve the efficiency and effectiveness of delivery of care systems abroad. Many funding agencies have come to the conclusion that the best way to help developing countries improve their health is through improving systems of care (not traditional biomedical research projects focusing on individuals). The World Health Organization refers to this as capacity building for Health Systems and Stewardship of national resources. Such organizations view health services research as an important component in improving systems of care in developing countries.\textsuperscript{16} This new emphasis in system development has led to increased hiring of individuals trained in health services research by international health care institutions and NGOs.

**Projected Student Enrollment**

<table>
<thead>
<tr>
<th></th>
<th>Year 1 2006 - 2007</th>
<th>Year 2 2007 - 2008</th>
<th>Year 3 2008 - 2009</th>
<th>Year 4 2009 - 2010</th>
<th>Target Year 2010 - 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HDCT FTES HDC FTES</td>
<td>HDCT FTES HDC FTES</td>
<td>HDCT FTES HDC FTES</td>
<td>HDCT FTES HDC FTES</td>
<td>HDCT FTES GRADS</td>
</tr>
<tr>
<td>New</td>
<td>3 2 5 3</td>
<td>7 4 10 6</td>
<td>15 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Returning</td>
<td>5 3 7 5</td>
<td>11 7 13 8</td>
<td>17 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8 5 12 8</td>
<td>18 11 23 14</td>
<td>32 20 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Definitions:**

- HDCT—fall headcount enrollment
- FTES—annual full-time equated student enrollment
- GRADS—annual number of graduates of the proposed program

The revenue expected to be realized from this enrollment is likely to be a mix of instate and out of state tuition, with approximately 20% out of state.

\textsuperscript{15} See http://www.medtap.com/Team/bios.cfm for a list of staff of MEDTAP offices in the United States, access on Monday, May 23, 2005.

Projected Resource Needs

Because of the ability to leverage existing faculty resources in the CNHS that support the graduate program in health systems management and the Center for Health Policy, Research and Ethics, there is only a modest request for additional faculty resources. With the support of the University, the College of Nursing and Health Science will receive two FTE (tenure-track) faculties to be added in year one and two of the program. In addition, we are asking for 30% of an administrative support position (Administrative Coordinator) to be added in year 3 of the program. The Coordinator will be responsible for marketing the program, handling inquiries from prospective students and facilitating applications and maintaining files of applicants, for informing students of admission decisions and assisting with advisement for financial aid etc. The Administrative Coordinator will also assist faculty in tracking student progress through the program and serve as a liaison between the program and alumni.
PROJECTED RESOURCE NEEDS FOR PROPOSED PROGRAM

Part A: Answer the following questions about general budget information.

- Has or will the institution submit an addendum budget request to cover one-time costs?
  Yes_____ No__\_x___

- Has or will the institution submit an addendum budget request to cover operating costs?
  Yes____ No__\_x___

- Will there be any operating budget requests for this program that would exceed normal operating budget guidelines (for example, unusual faculty mix, faculty salaries, or resources)?
  Yes_____ No__\_x___

- Will each type of space for the proposed program be within projected guidelines?
  Yes_\_x___ No____

- Will a capital outlay request in support of this program be forthcoming?
  Yes_____ No__\_x___

Part B: Fill in the number of FTE positions needed for the program.

<table>
<thead>
<tr>
<th></th>
<th>Program initiation year 2006 – 2007</th>
<th>Total expected by target enrollment year 2010 – 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On-going and reallocated</td>
<td>Added (New)</td>
</tr>
<tr>
<td>Full-time faculty</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Part-time faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classified Positions</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1.3</td>
<td>1.3</td>
</tr>
</tbody>
</table>
### Part C: Estimated $$ to initiate and operate the program.

<table>
<thead>
<tr>
<th></th>
<th>Program initiation year 2006 - 2007</th>
<th>Total expected by target enrollment year 2010 – 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time faculty</td>
<td>$75,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>FT Faculty Fringe Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time faculty</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Graduate assistants</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>GRA Wages and tuition Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classified position (.30 FTE)</td>
<td>$15,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>Classified position Fringe benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total personnel costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targeted financial aid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunication costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other resource needs (specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Part D: Certification Statement(s)

The institution will require additional state funding to initiate and sustain this program.

_____ Yes ____________________________
Signature of Chief Academic Officer

___x__ No ____________________________
Signature of Chief Academic Officer
If “no,” please complete Items 1, 2, and 3 below.

1. **Estimated $$ and funding source to initiate and operate the program.**

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Program initiation year 2006 – 2007</th>
<th>Target enrollment year 2010 – 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reallocation within the department or school <em>(Note below the impact this will have within the school or department.)</em></td>
<td>$75,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Reallocation within the institution <em>(Note below the impact this will have within the school or department.)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other funding sources <em>(Please specify and note if these are currently available or anticipated.)</em></td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

2. **Statement of Impact/Other Funding Sources.**

George Mason University and the College of Nursing and Health Sciences has committed to providing two new 9-month full-time faculty to teach in this and the graduate health systems management program. We anticipate that the program will generate new revenue/resources, in the form of increased student enrollments (tuition) and new sponsored research support.

3. **Secondary Certification.**

If resources are reallocated from another unit to support this proposal, the institution will **not** subsequently request additional state funding to restore those resources for their original purpose.

_x___ Agree ________________________________

Signature of Chief Academic Officer

_____ Disagree ________________________________

Signature of Chief Academic Officer
Appendix A: Faculty

Alemi, Farrokh, Associate Professor of Nursing and Health Science. BS 1976, MS 1978, Ph.D. 1983, University of Wisconsin-Madison.

Atherton, Marty, Professor of Health Systems Management, College of Nursing and Health Science. BA 1973, Michigan State University; MPH 1979, University of Michigan; Dr.P.H. 2001, University of Michigan.

Baghi, Heibatollah, Associate Professor of Statistics, College of Nursing and Health Science. BA 1974, University of Isfahan, Iran; MS 1975, Iowa State University; Ph.D. 1979, Iowa State University; Ph.D. 1988, Florida State University.

Gaffney, Kathleen, Director of the Ph.D. Program in Nursing, George Mason University College of Nursing and Health Science. BS in Nursing, St. Joseph College; MS in Maternal-Child Nursing, University of Maryland; Ph.D. in Human Development, University of Maryland.

Jennings, Carole P., Associate Professor. BSN 1969, Georgetown University, School of Nursing; MA 1972, University of Washington; Ph.D. 1987, The Catholic University of America.

Maddox, Peggy Jo, Professor and Director, Office of Research, Center for Health Policy, Research and Ethics. BSN 1974, University of Nevada; MSN 1981, The Catholic University of America; EdD 1995, Teachers College, Columbia University.

Matteo, John, Affiliate Faculty of Health Law, College of Nursing and Health Science. BA 1982, Fordham University; JD 1985, Catholic University of America.

Meiners, Mark R., Professor and Director, Center for Health Policy, Research and Ethics. BA, University of Wisconsin; MA, Ph.D., Georgetown University.

Palsbo, Susan E., Principal Research Scientist, Center for Health Policy, Research and Ethics. BA 1975 with Honors, Occidental College; MS 1977, Texas A&M University; Ph.D. 1992, George Washington University.

Panniers, Teresa, Assistant Dean for Graduate Nursing Programs and Associate Professor in the College. AAS 1972, Monroe Community College; BS 1976, Empire State College; MS 1979, University of Rochester; Ph.D. 1991, University of Rochester.
Appendix B:  Selected Faculty Research

Federally Supported Research

2005:  Award from HRSA/VDH: Dr. Maddox is PI on a State Planning Grant, Continuation Grant to develop a prototype community toolkit for health Insurance coverage planning.  The project is in process.

2004:  Award from HRSA/VDH: Dr. Maddox is PI on a State Planning Grant, to Analyze Uninsurance Among Employed Virginians and Develop an Economically Viable Model to Increase Health Insurance Coverage. The project is in process.

2004:  Award from Agency for Healthcare Research and Quality: CAHPS – People with Mobility Impairments. Dr. Palsbo is the Co-Project Director assisting AHRQ CAHPS project staff in guiding the development of the CAHPS-PWMI. Dr. Palsbo and the project staff are working with WESTAT, RAND, RTI, and Boston University. The project is scheduled to end in July 2005.

2002:  Dr. Alemi was the subcontractor to University of Maryland grant from National Institute of Drug Abuse to evaluate the cost effectiveness of providing treatment to individuals on probations. The project ended December 2004.

2003:  Award from Arlington County, VA. Dr. Alemi was a PI on a study of Interactive Website for Tobacco Prevention. The study was completed in 2004.

2001:  Award from Virginia Health Department. Dr. Maddox was a PI on a study to Develop a Telemedicine Evaluation Methodology for the Commonwealth of Virginia. The study was completed in 2002.

2000:  Award from the Department of Medical Assistance, Richmond, VA. Dr. Maddox was a PI on a study to Evaluate Virginia’s Medicaid Outcomes in Immunization and Prenatal Care in 1999. The study was completed in 2001.

2000:  Award from the Department of Medical Assistance, Richmond, VA. Dr. Maddox was a PI on a study to Analyze Virginia’s Medicaid Managed Care Program for Continuation of Eligibility for HCFA 1915 b (Medicaid Managed Care) Waiver. The study was completed in 2001.

1999:  Award from Virginia Department of Medical Assistance Services. Dr. Maddox was a PI on a Study of Potential Impact of Certificate of Need Repeal on Long-Term Care in Virginia. The study was completed in 2000.

Participants in US Congressional Deliberations

- Dr. Maddox, the Director of Research in the Center for Health Policy, Research and Ethics conducted a PHS funded legislatively mandated research project to test a new funding allocation methodology for Title VIII Programs. The results of the project resulted in a report to Congress.

- Dr. Alemi, participated in “Arming the Nation’s Health Professional Workforce for a New Approach to Substance Use Disorders”. This policy analysis was
funded by Health Professions Health Resources and Service Administration (HRSA) and was presented to Congress of United States.

- Dr. Alemi provided oral testimony to Congress of United States regarding the role of Internet in health care delivery.

**Advisors to Federal Government and Others**

Dr. Alemi, the Acting Assistant Dean for College of Nursing and Health Science, participated in the Science Panel on Health Communications, an advisory group to Department of Health and Human Services.

The Center for Health Policy and Research started the Improvement of the Year Award in 2005 and through this award provides benchmarked reports and active advice to area hospitals and clinics regarding their efforts to improve quality of care and patient safety. The Center also maintains a site on health care quality at [http://gunston.doit.gmu.edu/healthscience/708](http://gunston.doit.gmu.edu/healthscience/708). This is one of the premier sites in the world on health care quality and is provided password free to the health services research community.

Dr. Meiners has acted as a Consultant to several institutions of higher education and States agencies including the Agency for Health Care Policy and Research, Department of Health and Human Services and Health Care Financing Administration of the Centers for Medicare and Medicaid Services.

**Educators of Congressional Staff and Policy Analysts**

2005: Defending our Nation’s Health: Through Policy and Political Action
2004: Introduction to the Health Policy Process
2003: Why is America Hated: The Problem of Terrorism
2002: Health Care Policy: Challenges and Opportunities for the 21st Century
2001: Health Care Policy: Challenges and Opportunities for the 21st Century

The College of Nursing and Health Science provides an active web site for the public on health care decision analysis. The site is available without password protection as a service to the policy community. See [http://gunston.doit.gmu.edu/healthscience/730](http://gunston.doit.gmu.edu/healthscience/730)

**Support from Foundations and Other Funding Agencies**

2003: Award from the California Endowment. Dr. Meiners is a PI on the Long-Term Care Integration Program Physician Strategy project. The project is currently in process.
2003: Award from the Robert Wood Johnson Foundation Health e-Technologies Initiative. Dr. Palsbo was a PI on a study titled “Effectiveness Measures for Tele-rehabilitation.” The study measured the equivalence of several physical therapy and speech therapy batteries between face-to-face and remote demonstration.

2002: Award from the Robert Wood Johnson Foundation. Dr. Alemi was a PI on a study to examine the Viability of Providing Health Services through the Internet. The study was completed in 2005.

2001: Award from the American Medical Student Association. Dr. Maddox was a PI on a study to survey US Medical Schools Minority Student Recruitment and Retention. The study was completed and presented to the NIH consensus conference on diversifying future physician workforce in June 2002.

2001: Award from the Robert Wood Johnson Foundation. Dr. Alemi was a PI on a study of Reimbursement Policy for Online Substance Abuse Treatment. The study was completed in 2004.

1997: Award from Robert Wood Johnson Foundation. Dr. Meiners was a PI and Director of the National Program Office, Medicare/Medicaid Integration Program. The purpose of the grant was to assist states develop new systems of care that better coordinate acute, post-acute, and long-term care. The program was completed in 2004.

1996: Award from the Robert Wood Johnson Foundation. Dr. Meiners was a PI on a study of Cash and Counseling Demonstration and Evaluation. The study was a 3-state Effort to Understand the Feasibility of Offering Cash Instead of Services to Welfare clients to assist them in Caring for their Health and Disability Related Needs.

1995: Award from the Robert Wood Johnson Foundation Office on Service Credit Banking to Develop and Provide Technical Assistance to a Program to Link the Service Credit Volunteer Concept with Managed Care Organizations. The study was completed in 1999.

Security and Privacy Research

- As part of Critical Infrastructure Protection, Congress of United States funded research to examine needs of Capital Area security and privacy risks. Dr. Alemi’s research has focused on improving objective risk analysis in health care organizations.

- Doctors Maddox and Dawson are currently funded to examine emergency planning for capital area health care industry. With funding from the Office of Domestic Preparedness, George Mason University College of Nursing and Health Science, in collaboration with the graduate nursing program at George Washington University, will expand regional capacity building and planning efforts for nurses’ disaster/emergency response preparedness.
Leaders in Editorial and Scientific Fields

Members of the Center for Health Services Research, Policy and Ethics of the College of Nursing and Health Science are or have been on the editorial board of the following scientific journals:

1. Journal of Health Administration Education
2. Health Care Management Science Journal
3. Health Administration Education
4. Journal of Health Care Management Science
5. Editorial Board of the Association of University Programs in Health Administration Press
6. Journal of Mental Health and Aging
7. Policy, Politics and Nursing Practice
8. Nursing Policy Forum
9. Nursing Economics
10. Editorial Board of the Medical Care Research and Review
Appendix C: Selected Health Services Research Patents and Publications

Patent

1. Alemi F, Prudius V. A Mathematical Theory for Identifying and Measuring Severity of Episodes of Care. Patent application 10,054,706 filed on 1/24/2002 by George Mason University. The first patent application from College of Nursing and Health Science

Books


Book Chapters


Journal Publications


41. Carpentras G.; Pinna V.; Alemi F.; and Atherton M. Test of accuracy of Expected Treatment Outcome scale. Journal of Drug and Alcohol Abuse, Accepted for publication, 2005. Dr. Atherton is a junior faculty in Health Science.


47. American Bar Association’s Center on Children and Law prepared a special report on this article and its implications for judges in family courts. Dr. Nemes is a minority investigator being mentored by Dr. Alemi through a grant from the Robert Wood Johnson Foundation.


50. Alemi F.; Maddox P.J.; Prudius V.; and Doyon V. Evaluating Medicaid HMOs when encounter data are missing: case of developmentally delayed children. Health Care Management Science 2003 Feb; 6(1): 37-42.


71. Alemi F. Management matters: technology succeeds when management innovates. *Frontiers of health services management* 2000 Fall; 17(1):17-30. See also discussion of the paper in DeLuca JM, Enmark R. The article is followed with four commentaries on the article and Dr. Alemi’s reply to the commentaries. See pages 31 through 51.


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94. Alemi F.; Stephens R.C.; Muise K.; Dyches H.; Mosavel M.; and Butts J. Educating patients at home: Community Health Rap. Medical Care 1996, 34 (10) Supplement on Computer Services to Patients Homes through Their Telephones.

95. Alemi F. and Stephens R.C. Description of services and summary of findings. Medical Care 1996, 34 (10) Supplement on Computer Services to Patients Homes through Their Telephones.


# Appendix D: Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI 799</td>
<td>3</td>
<td><strong>Advanced Quantitative Analysis for Health Care Research I (3:3:0)</strong>. Prerequisite: A graduate level course in statistics. Examines factorial ANOVA, factorial ANCOVA, repeated measures ANOVA&lt; ANOVA, ANCOVA via regression approach, and multiway frequency analysis. Students apply mathematical calculations and interpret SPSS outputs using healthcare research data.</td>
</tr>
<tr>
<td>HSCI 800</td>
<td>3</td>
<td><strong>Advanced Quantitative Analysis for Health Care Research II (3:3:0)</strong>. Prerequisite: NURS 799 or an equivalent statistics course. Examines multivariate analysis of variance (MANOVA) multivariate analysis of covariance (MANCOVA), and multiple regression (ordinary least squares) and logistic regression. Students apply mathematical calculations and utilize linear combinations for multivariate tests in healthcare research.</td>
</tr>
<tr>
<td>HSCI 801</td>
<td>3</td>
<td><strong>Advanced Multivariate Statistics and Data Analysis in Healthcare Research (3:3:0)</strong> NURS 800 or an equivalent multivariate statistical course. Examines canonical correlation, discriminant analysis, factor analysis, and causal analysis (path models and structural equation modeling.). Students analyze and interpret data utilizing these statistical techniques.</td>
</tr>
<tr>
<td>HSCI 712</td>
<td>3</td>
<td><strong>Health Services Research (3:3:0)</strong> This course is designed to focus your attention on how these various tools interrelate. The goal is to apply health services research within the ‘real world.’ Where possible, examples drawn from practice will be used to illustrate how and why health services research is conducted. As added value, we will share these examples with each other as a convenient learning framework. You will train each other and critique your peers. Bring your work projects to this class. We will dissect them using state-of-the-art techniques that are both theory-based AND practical throughout managed care, hospital management, and specialty healthcare service delivery.</td>
</tr>
<tr>
<td>HSCI 726</td>
<td>3</td>
<td><strong>Advanced Seminar in Epidemiology (3:3:0)</strong> Explore use of Causal Networks and Bayesian Probability Models in making causal inferences from non-randomized studies in health care domain.</td>
</tr>
</tbody>
</table>
Statistical concepts such as confounding, selection bias, overall effects, direct effects, and intermediate variables will be defined and statistically measured within the context of a counterfactual causal model. The course focuses on application of causal diagrams to epidemiological studies. Students will reanalyze data sets using software available for causal diagrams and apply appropriate descriptive and analytic epidemiologic methodology to the data.

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<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HSCI 920</td>
<td>3</td>
<td>Qualitative Research in Nursing and Health Care (3:3:0)</td>
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<td></td>
<td>Prerequisites or co-requisites: NURS 955/HSCI 960 and a multivariate statistics course (HSCI 800 or equivalent); familiarity with e-mail and computers. Analysis of the philosophical foundations and approaches to qualitative research in nursing and health care administration, health care policy, and health care ethics within the scholarship of discovery, integration, application, and teaching. Computer analysis is required.</td>
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<tr>
<td>STAT 574</td>
<td>3</td>
<td>Survey Sampling I (3:3:0)</td>
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<td>Prerequisite: STAT 354 or 554; co-requisite: STAT 362 or 501. Design and implementation of sample surveys. Covers components of a survey; probability sampling designs to include simple random, systematic, Bernoulli, proportional to size, stratified, cluster and two-stage sampling; and ratio and regression estimators. Practical problems encountered in conducting a survey are discussed. Methods are applied to case studies of actual surveys. Class project is required.</td>
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<tr>
<td>STAT 665</td>
<td>3</td>
<td>Categorical Data Analysis (3:3:0)</td>
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<td>Prerequisite: STAT 554 or equivalent and STAT 501. Analysis of cross-classified categorical data in two and higher dimensions. Familiarity with the basic test for two-way contingency tables and elementary regression and analysis of variance as presented in STAT 554 is presumed. Topics include measures of association, logistic regression, linear response models, loglinear models, repeated measurements data, and analysis of incomplete tables. A computer statistical package is used extensively for data analysis.</td>
</tr>
<tr>
<td>STAT 668</td>
<td>3</td>
<td>Survival Analysis (3:3:0)</td>
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<td></td>
<td>Prerequisites: STAT 544, STAT 554 or STAT 535, and STAT 501 or a working knowledge of SAS. Survival Analysis is a class of statistical methods for studying the occurrence and timing of events. In medical research, the events may be deaths and the objective is to determine the factors affecting survival times of patients following treatment, usually in the setting of clinical trials. The methods can</td>
</tr>
</tbody>
</table>
also be applied to the social and natural sciences and engineering where they are known by other names (reliability, event history analysis, etc.). The concepts of censored data, time-dependent variables, and survivor and hazard functions are central. Nonparametric methods for comparing two or more groups of survival data are studied. The Cox regression model (proportional hazards model), Weibull model, and the accelerated failure time model are studied in detail. Concepts are applied to the analysis of real data from major medical studies using SAS software.

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<tbody>
<tr>
<td>HSCI 720</td>
<td>3 credits</td>
<td><strong>Health Data Integration (3:3:0).</strong> Students learn to manipulate large databases, create link table queries, write SQL application programs, understand sources of data conflicts, and identify methods of integrating ODBC databases with legacy data. Students learn concepts of data warehousing, methods of analysis of large databases including Bayesian belief networks and machine learning in the health care context. Course involves a semester-long data integration group project.</td>
</tr>
<tr>
<td>HSCI 709</td>
<td>3 credits</td>
<td><strong>Healthcare Databases (3:3:0).</strong> Introduces students to design and use of health and medical databases. Provides hands-on experience with design and use of databases. Explores uses of medical record systems. Includes review and analysis of databases and database management systems. Examines application of databases to clinical and managerial transaction.</td>
</tr>
<tr>
<td>HSCI 601</td>
<td>3 credits</td>
<td><strong>Electronic Commerce and Online Marketing for Health Services (3:3:0).</strong> Students explore the development of online health services, the organization of online businesses, online marketing, online financial and clinical transactions, and venture capital and IPO process. In addition, students learn about creating and maintaining web pages and online databases. The course reviews the literature on impact of computer services on patient care and health care organizations, and examples of successful and bankrupt technology firms in health care. Students, in groups, draft a business plan and develop early version of the service they are proposing.</td>
</tr>
<tr>
<td>HSCI 740</td>
<td>3 credits</td>
<td><strong>Management of Health Information Systems (3:3:0).</strong> Introduces health and medical information systems with emphasis on systems analysis and design to support managerial and clinical communications and decision making. Explores trends and innovations in information technology and systems, focusing on the managerial oversight of health and medical information systems. Explores contemporary management strategies for</td>
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<td>Course Code</td>
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<tr>
<td>HSCI 730</td>
<td>3</td>
<td><strong>Decision Analysis in Healthcare (3:3:0).</strong></td>
</tr>
<tr>
<td>HSCI 866</td>
<td>3</td>
<td><strong>Health Care Public Policy (3:2:1).</strong></td>
</tr>
<tr>
<td>HSCI 525</td>
<td>3</td>
<td><strong>Risk Analysis in Health and Biosciences (3:3:0).</strong></td>
</tr>
<tr>
<td>HSCI 547</td>
<td>3</td>
<td><strong>Health Care Regulation (3:3:0).</strong></td>
</tr>
<tr>
<td>HSCI 745</td>
<td>3</td>
<td><strong>Health Care Security Policy (3:3:0).</strong></td>
</tr>
<tr>
<td>HSCI 750</td>
<td>3</td>
<td><strong>Health Care Management, Policy, Law, and Ethics</strong></td>
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<tr>
<td>Course Code</td>
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<tr>
<td>HSCI 715</td>
<td>3 credits</td>
<td>Health Economics (3:3:0)</td>
</tr>
<tr>
<td>HSCI 746</td>
<td>3 credits</td>
<td>Advanced Seminar in Security (3:3:0)</td>
</tr>
<tr>
<td>HSCI 727</td>
<td>3 credits</td>
<td>Program Evaluation (3:3:0)</td>
</tr>
<tr>
<td>PUBP 700</td>
<td>4 credits</td>
<td>Theory and Practice in Public Policy (4:4:0)</td>
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<tr>
<td>Course Code</td>
<td>Credits</td>
<td>Course Title</td>
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<tr>
<td>PUBP 762</td>
<td>3 credits</td>
<td>Social Institutions and Public Policy (3:3:0). The limited government involvement in social policies changed drastically during the 1960s, with an explosion of social programs designed to ameliorate poverty, reduce crime, eliminate racial segregation, and to generally lessen the adverse consequences of these conditions. These new social policies affect many institutions, including the family, schools and colleges, the criminal justice system, and government agencies themselves. Many of these policies have been controversial, with debates over their efficacy and whether they have cured or exacerbated the social problems they were designed to alleviate. This course examines the evolution and status of selected American social policies, including civil rights policies, education reform, family policy, crime prevention, and other topics that can be chosen by students. Readings and discussions on policy issues are linked to readings and discussions on social theories and value systems that underpin these social policies.</td>
</tr>
<tr>
<td>HSCI 994 /NURS 994</td>
<td>3 credits</td>
<td>Nursing Research Seminar (3:3:0). Prerequisite: Completion of all course work except HSCI/NURS 999. Seminar for doctoral students to accompany the development of a research proposal. Development of the research problem with analysis and critique of methodology is discussed.</td>
</tr>
<tr>
<td>HSCI 998</td>
<td>3+ credits</td>
<td>Doctoral Dissertation Proposal (1-6:0:0). Prerequisite: Completion of all course work except HSCI/NURS 999. Provides faculty assistance on an individual basis to complete research proposal planned in NURS 999. The final research proposal forms the basis for the doctoral dissertation. May be repeated up to four times.</td>
</tr>
<tr>
<td>HSCI 999</td>
<td>3+ credits</td>
<td>Doctoral Dissertation (9:0:0). Prerequisite: HSCI/NURS 994. Provides continued faculty assistance on an individual basis toward the completion of the approved dissertation.</td>
</tr>
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</table>
### Appendix E: Employment Opportunities

The following employment opportunities were advertised in AcademyHealth from January 2005 to March 2005.¹⁷

<table>
<thead>
<tr>
<th>Position</th>
<th>Location</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director for Center for Health Care Innovation &amp; Archstone Foundation Endowed Chair</td>
<td>CA – Long Beach</td>
<td>California State University, Long Beach</td>
</tr>
<tr>
<td>Health Economist</td>
<td>CO – Aurora</td>
<td>University of Colorado Health Sciences Center Division of Health Care Policy and Research</td>
</tr>
<tr>
<td>Research Associate</td>
<td>DC – Washington</td>
<td>The George Washington University Medical Center, Center for Health Services Research and Policy</td>
</tr>
<tr>
<td>Health Services Researcher</td>
<td>DC – Washington</td>
<td>DHHS/CMS/Office of Research, Development, and Information</td>
</tr>
<tr>
<td>Associate Dean for Research and Faculty Development and Professor</td>
<td>FL – Tampa</td>
<td>University of South Florida, College of Public Health</td>
</tr>
<tr>
<td>Health Services Researcher</td>
<td>MD – Baltimore</td>
<td>DHHS/CMS/Office of Research, Development, and Information</td>
</tr>
<tr>
<td>Assistant/Associate Professor (Non-Tenure Track)</td>
<td>MD – Baltimore</td>
<td>University of Maryland, Baltimore School of Pharmacy Pharmaceutical Health Services Research Dept.</td>
</tr>
<tr>
<td>Sr. Specialist, Research and Innovation</td>
<td>MD – Bethesda</td>
<td>The American College of Cardiology</td>
</tr>
<tr>
<td>Research Associate</td>
<td>MD – Rockville</td>
<td>Social and Scientific Systems</td>
</tr>
<tr>
<td>Health Services Research Associate Director</td>
<td>MA – Boston</td>
<td>Center for Organization, Leadership and Management Research</td>
</tr>
<tr>
<td>Dean, College of Allied Health Professions</td>
<td>MT – Billings</td>
<td>Montana State University – Billings</td>
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<thead>
<tr>
<th>Position</th>
<th>Location</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Medicare Claims Data Analyst</td>
<td>NH – Hanover</td>
<td>Dartmouth Medical School Center for the Evaluative Clinical Sciences</td>
</tr>
<tr>
<td>Associate/Full Professor in Health Policy</td>
<td>NJ – New Brunswick</td>
<td>Rutgers University Center for State Health Policy</td>
</tr>
<tr>
<td>Senior Research Associate</td>
<td>NY – New York</td>
<td>Brookdale Center on Aging of Hunter College</td>
</tr>
<tr>
<td>Faculty Positions (4)</td>
<td>OH – Cleveland</td>
<td>The Cleveland Clinic Foundation Department of Quantitative Health Sciences</td>
</tr>
<tr>
<td>Health Services Researcher</td>
<td>PA – Philadelphia</td>
<td>American College of Physicians</td>
</tr>
<tr>
<td>Research Faculty, Biostatistics and Public Health</td>
<td>RI – Rhode Island</td>
<td>Brown University</td>
</tr>
<tr>
<td>Chair, Department of Public Health Management and Policy</td>
<td>VA – Richmond</td>
<td>Virginia Commonwealth University School of Public Health Initiative School of Medicine</td>
</tr>
<tr>
<td>Health Care Analyst</td>
<td>VA – Rosslyn</td>
<td>The Moran Company, LLC</td>
</tr>
<tr>
<td>Intervention Evaluation Specialist</td>
<td>WI – Madison</td>
<td>University of Wisconsin</td>
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