



Office of Academic Affairs

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800 Georgia Southwestern State University Drive  
Americus, Georgia 31709-4379

May 4, 2009

Dr. Susan Herbst  
Chief Academic Officer & Executive Vice Chancellor  
Board of Regents of the University System of Georgia  
270 Washington Street, SW  
Atlanta, GA 30334

Dear Dr. Herbst,

Please find enclosed the Letter of Intent for the Master of Science degree in Environmental Science and Policy. The proposed program has been reviewed by Georgia Southwestern State University's College of Arts and Sciences faculty committees and has also been approved by the Graduate Affairs Committee of the university.

Thank you for your consideration of this matter.

Sincerely,

*Brian U. Adler*

Brian U. Adler  
Vice President for Academic Affairs

Pc: Dr. Melinda Spencer, Chief of Staff, Academic Affairs  
Dr. Marci Middleton, Director, Academic Program Coordination



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## MASTER'S DEGREE

## LETTER OF INTENT

Institution: Georgia Southwestern State University

Institutional Contact: Brian U. Adler, VPAA

Date: May 4, 2009

School/Division: College of Arts and Sciences

Department: Chemistry

Name of Proposed Program: Environmental Science and Policy

Degree: Master of Science

Major: Environmental Science

Degree Inscription: Master of Science in Environmental Science

CIP Code: Anticipated Starting Date: August 1, 2010

Program Classification: Master of Science

### **Institutional Mission**

1. Does this program further the mission of your institution?

Georgia Southwestern's mission is to offer its students 'personalized and challenging experiences in preparation for successful careers, leadership roles, productive citizenship, and a satisfying quality of life' through 'outstanding professional and degree programs of study with a foundation in the liberal arts and sciences'. The proposed graduate program will provide essential experiences and training required for successful careers in the field of

environmental science and policy. The program will also make significant contributions to the educational, economic and social development of the region and state.

2. Will the proposed program require a significant alteration of the institutional mission?

No. The proposed program will augment the mission of Georgia Southwestern State University.

3. Will the program require the addition of a new organizational unit to the institution (e.g. college, school, division or department)?

No. The program will be housed in Department of Chemistry in the College of Arts and Sciences and will not require a new organizational unit.

4. Is it likely that a SACS visit for substantive change will be necessary?

No.

5. How does the proposed program help meet the priorities/goals of your strategic plan?

Environmental science is considered an interdisciplinary science. The program will support interdisciplinary learning, a goal of the University's strategic plan. In addition, the development of this program fits with the institutional and system-wide goal of increasing enrolment, retention and graduation rates in science, technology, engineering, and math (STEM).

6. Will this proposal require an addition or change in your institution strategic plan?

No.

7. Will the program require an increase in state appropriation within the next five years?

Yes. Within the first five years the program will require funds for renovation and expansion of office and laboratory space, upgrade of equipment, and an additional faculty line.

Redirection of existing funds, lab fees, student tuition, and external funding will also be used to address financial.

8. If this is a baccalaureate program, will you be asking for an exception to the 120 hour expectation or to the core curriculum?

NA

9. Are there program delivery formats that will be new or different for your institution?

No.

### **Need**

There is currently a significant need for environmental scientists, and projections of governmental agencies indicate an even greater demand in the future. The Environmental Protection Agency<sup>i</sup> (EPA) currently lists more than 20,000 business, educational, and governmental activities in the State of Georgia. Such activities are usually overseen by environmental specialists, scientists, or educators. According to recent data from the U.S. Census Bureau<sup>ii</sup>, the population of Georgia has increased 14.4% between April 1, 2000 and July 1, 2006, which is more than twice the national average of 6.4%. The population growth has led to a profound increase in the demand for natural resources and impact on the environment. The recent drought in the southeastern United States has demonstrated the limited nature of these resources and required mandatory water conservation. Drought can have devastating economic effects not only on the population but also on the fragile ecosystems of Georgia and the neighboring states. A greater focus on national security following 9/11 has also resulted in an increased awareness of other environmental issues such as handling and storage of hazardous materials, and food and water safety. All of these factors have resulted in a greater demand for trained environmental scientists that are able to handle these compliance issues defined by federal and state environmental policies and regulations.

The proposed MS in environmental science program is aligned with the goal of the University System to increase the interactions between the universities and businesses within the state. The College Opportunity and Affordability Act of 2008 includes \$50 million

for a University Sustainability Grants Programs. Thus, the proposed program is also in agreement with national trends in science and education as well as the STEM Initiative, promoting science, technology, engineering and math.

The proposed program will be supported by strong Biology, Chemistry, and Geology curricula currently offered at GSW. The faculty members in these departments are committed to, and have expertise in environmental education and research. Expertise in environmental economics and policies will also come from the School of Business, History, and Political Science faculty. The proposed program supports the University's strategic goal of providing interdisciplinary education and will be a unique graduate program preparing environmental professionals to meet local and regional needs.

The program is applied in nature, rather than research oriented, and preliminary contacts with local and state industries and governmental offices have been made to determine the potential employment opportunities for graduates of the program. Nation-wide reviews of master's degrees in environmental sciences have been made, and are being made to determine the curriculum most supportive of the career goals of the students.

According to the Bureau of Labor Occupational Outlook Handbook, 2008-09 Edition,<sup>iii</sup> "Employment of environmental scientists is expected to increase by 25 percent between 2006 and 2016, much faster than the average for all occupations" .... "Although a bachelor's degree in an earth science is adequate for a few entry-level jobs, employers prefer a master's degree."... "Growth in employment of environmental scientists and hydrologists will be spurred largely by the increasing demands placed on the environment and water resources by population growth. Further demand should result from the need to comply with complex environmental laws and regulations, particularly those regarding groundwater decontamination, clean air, and flood control." The national "median annual earnings of environmental scientists were \$56,100 in May 2006. The middle 50 percent earned between \$42,840 and \$74,480. The lowest 10 percent earned less than \$34,590, and the highest 10 percent earned more than \$94,670." "About 35 percent of environmental scientists were employed in State and local governments; 21 percent in management, scientific, and technical consulting services; 15 percent in architectural, engineering and related services; and 8 percent in the Federal Government. About 2 percent were self-employed."

The demand for environmental scientists is well recognized at the state level as well. According to the Georgia Department of Labor, Workforce Information and Analysis Division ... "the demand for educated workers in Environmental Science is expected to increase 39% by 2010." "The median annual income in Georgia for Environmental Scientists and Specialists was \$45,200 in 2002."

The program will appeal to students with interests in biology, chemistry, and geology. It will provide additional graduate-level classes for students in the Master of Education program and additional professional opportunities for students who excel in the sciences. Student demand should be high. The program will offer a sound interdisciplinary background, ensuring students success in pursuing alternative careers as well.

### **Students**

Once established the program will produce approximately 5 or more graduates each year. This is a realistic estimate considering the anticipated relatively-large enrollment of non-traditional students. Approximately 50% of the students will be students graduating from the current programs at GSW in biology, chemistry, and geology. The remaining enrollment will be students who hold a bachelor's degree in the sciences or engineering from other universities. The percentage of students coming from existing masters programs at GSW is probably less than 5%. Thus, the proposed degree will not have a negative impact on the enrollment of other programs.

### **Budget**

The proposed master's program will require some external funds and reallocation of existing money to support a new faculty line within the first five years of the program. Teaching assistant positions will be needed for recruitment and operation of the program. Steady-state costs are estimated to be approximately \$40,000, excluding the additional faculty line. Some of these costs will be offset by added tuition and student fees from the program

Funds will be necessary to hire a faculty member with hydrology and environmental specialties into the currently vacant position in the geology department. Additional funds will

be needed to supply the increased equipment in the existing departments, to upgrade and renovate lab space as well as graduate student offices. Possible funding sources include redistribution of available funds, support from industries, and federal grants. Funding from the University Sustainability Grants Program, authorized by the College Opportunity and Affordability Act of 2008 will be pursued. Start up cost of approximately \$10,000 will be covered by reallocations of funds and initial tuition money.

### **Facilities**

The proposed degree will require additional research and classroom-oriented laboratory facilities. Specific space allocations will be assigned through the Vice President for Academic Affairs.

### **Curriculum and Delivery**

1. Are there special characteristics of the curriculum (as compared to similar programs)?

The proposed program will build upon a core curriculum similar to the ones already utilized at other institutions in the University System of Georgia. The program will provide advanced focus in biology, chemistry, geology, physics, environmental economics, and environmental policy courses that support environmental careers. Elective courses will allow the students to acquire extra expertise in a specific science and improve individual strengths. Courses in hazardous material management, landfill management, recycling, waste water treatment, environmental health and environmental policy will provide the basic core of the curriculum. The program will provide the students with special training necessary to obtain the Certified Hazardous Material Manager<sup>iv</sup> (CHMM) credential. The CHMM certification is administered by the Institute of Hazardous Materials Management, and is the nationally recognized standard of excellence in the field of hazardous materials management. The program will also provide the foundations of OSHA<sup>v</sup> compliance in agreement with the National Safety Council regulations.

2. Will the program require new or special student services?

No. Georgia Southwestern State University is equipped to provide the necessary student services.

3. Will the program be attractive to underserved populations?

Georgia Southwestern State University historically draws 75% of its students from the counties around the University. Within these counties approximately 30% of the high school graduates enter colleges or universities, and 17% entered technical schools or other education programs. Based on these data, the population is underserved. The area is rural with a strong agricultural base. The students have strong local environmental ties and interest, which along with the potential employment will encourage them to enter the program. This program would potentially be attractive to minority students who complete their bachelor's degrees at GSW.

### **Collaboration**

1. If there are similar programs in your service area, how will the proposed program affect them?

Based on reviews of existing programs within the University System of Georgia (USG) the proposed program will have a partial overlap with the Master of Science in Environmental Science at Columbus State University (CSU). Our program will not have a negative effect on the program at CSU or any other programs within USG. The proposed program is different and will offer an opportunity for students interested in pursuing a graduate degree in a small institution such as Georgia Southwestern State University. The program targets students interested in acquiring specialized practical skills rather than well-defined but broad interdisciplinary knowledge. The students will receive the background necessary to pass OSHA and CHMM exams, necessary for jobs in the hazardous material industry. Additionally, many of the specific elective courses at CSU require several prerequisites in that particular field and therefore it is unlikely that a student could take a "self-designed" curriculum much different than their undergraduate program. This is one of the big

differences in our program. All of the courses we are likely to offer require few if any prerequisites.

2. Do you plan a collaborative arrangement with another institution or entity?

The proposed program can be used to support the existing Master of Education degree at GSW. Some of the newly developed courses in the Master of Environmental Science and Policy (or Sustainability) can be used by the students specializing in science education, which will provide future teachers with graduate level science courses, and will enhance the viability of both programs. Possible collaboration is also being pursued with state and government agencies such as, EPA, NESPAL, Georgia Soil and Water Conservation Commission.

## References

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<sup>i</sup> Environmental Protection Agency: <http://www.epa.gov>

<sup>ii</sup> US Census Bureau: <http://quickfacts.census.gov/qfd/states/13000.html>

<sup>iii</sup> Occupational Outlook Handbook: <http://www.bls.gov/oco/ocos050.htm>

<sup>iv</sup> Institute of Hazardous Materials Management: <http://www.ihmm.org>

<sup>v</sup> National Safety Council: <http://www.nsc.org>