

APR 3 2006

**PROPOSAL TO THE SENATE COMMITTEE ON EDUCATIONAL POLICY** **OFFICE OF THE DEAN****TITLE OF THE PROPOSAL:** Formation of the School of Earth, Society, and Environment**SPONSOR:** College of Liberal Arts and Sciences, Dr. Sarah C. Mangelsdorf, Dean, 294 Lincoln Hall;  
[smangels@uiuc.edu](mailto:smangels@uiuc.edu); 3-1350**BRIEF DESCRIPTION:** The College of Liberal Arts and Sciences proposes the formation of the School of Earth, Society, and Environment. The proposed School will include the Departments of Atmospheric Sciences, Geography, and Geology.

**JUSTIFICATION:** The establishment of the School of Earth, Society, and Environment has the potential to greatly improve the University's stature and performance in research and teaching related to the Earth Sciences and their interactions with society and the environment. SESE aspires to be a premier program that maintains strengths in core disciplines of the member departments, yet at the same time forms bridges among these disciplines to tackle new problems that pertain to the Earth System and its human dimensions. As such, the School will be able to serve as an intellectual focus for research and education in environmental studies and policy within LAS, and will help foster productive collaborations concerning these topics with units in other Colleges on the campus. The School will maintain both physical science and social science components, and thus will be able to anchor a flexible, interdisciplinary undergraduate and graduate curriculum that meets the needs of a diverse student body in LAS. At the same time, the School will ensure that students will be able to specialize in core disciplines of the departments comprising the School, both at the undergraduate and graduate level. Finally, the School will also serve as an anchor for discipline-based and interdisciplinary research centers and programs that will provide the flexibility and critical mass to address evolving research directions.

The Earth is a complex and dynamic system, consisting of multiple physical, biological, and cultural components. Study of these components, and of interactions among them, provides the shared intellectual foundation of the Departments of Atmospheric Sciences, Geography, and Geology. In addition, many research and educational issues in our disciplines are becoming more and more multidisciplinary and interdisciplinary, requiring information and skills that involve the interactions and feedbacks intersecting the Earth sciences, the human dimensions, and the study of the environment. Further cementing of the intellectual foundation for the School comes from the many intellectual endeavors and skills common to all three disciplines, such as remote sensing, GIS, and fluid dynamics. Current academic pursuits in these departments cover a broad spectrum of sub-disciplines, ranging from those that address the basic science of the solid Earth and its gas/water envelope, to those that address the social science of cultures that inhabit its surface. In this regard, the research and teaching programs of the three departments serve as an essential intellectual component of any major university that strives to address emerging challenges of global change—in its broadest sense—that are developing in the 21st century.

While the strength and visibility of the Departments of Atmospheric Sciences, Geography, and Geology on this campus have been improving substantially in recent years, the rate of improvement and national ranking of these departments has been negatively impacted by their small size and long-standing isolation from one another. Currently, the departments have totally separate administrations and do not share space. As a result, members of the different departments have rarely interacted, and the development of common research and teaching interests has been slow. This situation is unfortunate for several reasons: (1)



Increasingly, cutting-edge research concerning the Earth system is multidisciplinary and interdisciplinary; (2) Small units, such as the three Earth-related departments, have difficulty competing for the highest quality students and faculty, as well as for campus and external resources; and, (3) As separate entities, the departments have not been in a position to develop a broadly appealing undergraduate major that can serve LAS students who wish to understand a wide spectrum of environment-related issues from a liberal arts perspective.

The drive to start SESE comes from the assumption that member departments will become more vibrant and productive intellectual entities than could occur in isolation. The strategic themes of SESE mesh well with the University's Strategic Plan. As part of this, SESE will be poised to play a key role in the Illinois Sustainable Energy and the Environment Initiative. Forging an alliance of the three departments, by establishing the School, provides a mechanism for creating a stronger, more visible unit on this campus, and provides a clearer focus for environment-related studies concerning the Earth System within LAS. The School will be unique on the national scene, both because of the specific mix of disciplines—including physical and social science—that it will incorporate, and because of its leadership in multidisciplinary research both within and outside the university. The three departments have already demonstrated their ability to cooperate by jointly establishing a "Center for Water as a Complex System" (CWACES), which has successfully recruited outstanding new faculty to the campus.

The School will encompass three academic departments, each of which hosts undergraduate (B.S., the Atmospheric Sciences major is currently undergoing the approval process) and graduate programs (M.S. and Ph.D.) as well as research centers. As noted above, CWACES has already been established, and other centers (one focused on Earth Materials and one focused on Environmental Policy) are under development. Each department will continue to administer its own academic programs, but the School will anchor an interdisciplinary undergraduate major for LAS students, a program for teacher training in Earth Science, and outreach activities. Business and technical operations will also be managed at the School level. Thus, the School will provide a setting within which interdisciplinary collaborations and synergies among the departments, and between the departments and other campus units, are encouraged and can thrive.

The name of the School of Earth, Society, and Environment was carefully chosen to reflect its disciplines, its intellectual foundation as discussed above, and the interactions that will define its leadership role within the College of Liberal Arts and Sciences during the 21<sup>st</sup> century. Earth comes from the links across the Earth sciences in the School, Society from the interactions with the human dimensions throughout the School and especially from the studies of humanity and culture within the social geography component of Geography, and Environment from the important role our disciplines play in the study of our planet and the effects humanity has on our natural world.

SESE is not intended to replace or duplicate other units on campus that address issues pertaining to the environment (e.g., the Department of Natural Resources and Environmental Science; the Department of Civil and Environmental Engineering; the Environmental Council). Rather it is intended to serve as a focus for scholarship in the Earth sciences and their relationship to society and the environment in LAS, and thus is designed to serve the needs of LAS students. Students graduating from SESE will either have specialized degrees in geology, geography, or atmospheric science and will be prepared for graduate or professional work in those fields, or will have a general liberal arts major in interdisciplinary environment-related studies cutting across the Earth sciences and the human dimensions that will provide a background necessary to be an informed citizen capable of future success in diverse fields, including law and business. In this regard, it is anticipated that the interdisciplinary major anchored in SESE can provide an alternative home for students who currently have packed into overcrowded LAS majors.



**BUDGETARY AND STAFF IMPLICATIONS:** The formation of SESE will require a reconfiguration of support operations currently housed in the three departments, in order to allow these units to advance their educational and research missions more effectively. However, the academic structures of the departments will remain intact—no departments are being created or eliminated, and no faculty will need to change departments.

The creation of the School requires the services of a Director, appointed by the Dean. The Director's duties are listed in the bylaws that accompany this document. It will also require the hiring of an Associate Director of Operations who will oversee business and technical support for the School. This position has already been authorized by the College.


The budgetary implications are limited to the salary increments for a Director, and approximately one-half of an administrative assistant to the Director. The major administrative changes have already taken place, with joint managements of all support functions performed by the non-academic staff. Faculty hires, teaching assistant budgets, teaching load assignments, endowment administration, direction of majors and graduate programs, will remain the purview of individual units.

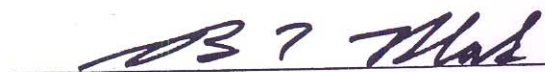
No non-academic staff or academic professional support staff have lost their jobs. However, some may be transferred within the administrative structure, and there will be a reconfiguration of responsibilities.

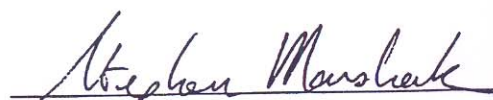
**GUIDELINES FOR UNDERGRADUATE EDUCATION:** Undergraduate curricula and disciplinary majors remain under the control of the individual units. An interdisciplinary major, called the Earth System, Environment and Society (ESES), that will be managed by the School, has been submitted to the campus for approval. The encouragement of interdepartmental contacts will likely lead to more team-taught and cross-listed courses across the units.


**PROPOSED EFFECTIVE DATE: Fall 2007.**

**CLEARANCES:** In light of the an unanimous vote of the faculty, taken as individuals, the Departments of Atmospheric Sciences, Geography, and Geology agree to the formation of the School. The bylaws of the School were approved by the faculty on or before October 31, 2005.

  
Department of Atmospheric Sciences

  
Department of Geography

  
Department of Geology

  
College of Liberal Arts and Sciences

Office of the Provost

Minutes  
Public Hearing  
Formation of the School of Earth, Society, and  
Environment (SESE)  
College of Liberal Arts and Sciences  
Committee on Educational Policy, UIUC Senate

31 October  
3:45 PM  
1080 Foreign Languages Building

**Abstract**

The College of Liberal Arts and Sciences (LAS) proposes the formation of the School of Earth, Society, and Environment (SESE). The proposed school will include the departments of Atmospheric Sciences, Geography, and Geology.

A hearing scheduled by the College of Liberal Arts and Sciences and the UIUC Senate Committee on Educational Policy (Ed Pol) was held on 31 October 2006 at 3:45 PM in Room 1080 Foreign Languages Building (FLB). These are the minutes of the meeting.

The hearing was recorded and a copy of the video is available at  
<http://atlas-real.atlas.uiuc.edu:8080/ramgen/LAS/LAS-V-2006-31/LAS-V-2006-31.rm>

## 1 Minutes

Professor Abbas Aminmansour, Chair<sup>1</sup> of the Committee on Educational Policy, called the hearing to order a few minutes after 3:45 PM. Approximately 50 individuals attended the hearing. After introducing the sponsors of the hearing and the grounds for calling the hearing Professor Aminmansour called upon Sarah Mangelsdorf, Dean of the College of Liberal Arts and Sciences, to make opening remarks.

Dean Mangelsdorf mentioned the mission of proposed school. She continued by indicating the strengths that the new school would have and opportunities that the proposed school would provide the college and campus. She concluded by saying that the school will have

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<sup>1</sup>aamin@uiuc.edu



- combined strength greater than the sum of the individual unit strengths,
- a stronger voice in the college and on the campus,
- shared opportunities for academic excellence,
- an attraction to new faculty, and
- shared resources providing savings over the individual units.

These remarks can be viewed on the video.

Professor Donald J. Wuebbles, Executive Coordinator of the proposed school, read a statement that is attached.

Professor Wesley M. Jarrell, Head of the Department of Natural Resources & Environmental Sciences (NRES), also read a statement. In his statement he reviewed the history of the formation of departments and schools of environmental sciences and related this to the current proposal. A copy of his statement should be available to the committee.

Professor Aminmansour then opened the floor for questions and/or comments from the assembled audience. A short summary of these follows:

Professor Phil Giles asked whether NRES is for the formation of the school, against, or neutral? Professor Jarrell replied that NRES is neutral at this point.

Professor Wuebbles read the mission statement of NRES. He mentioned that there are differences between NRES and SESE, that the programs are complementary.

Professor Steven Marshak, Head of the Department of Geology, pointed out that the faculty has been fully supportive and engaged in the formation of this school at every step of the way.

Mr. Dan Pounder, a graduate student, stated that only positive things can come from the school.

Dean Mangelsdorf concluded by saying that the faculty involved have been involved with the plans from the very beginning. This involved included a hearing for the faculty involved. Professor Wuebbles added that planning began over 4 years ago. The process involved almost weekly meetings of department heads. The final proposal was approved unanimously by the faculty of the three departments.

The hearing ended at 4:35 PM.

Respectfully submitted,

Robert M. Fossum  
Professor of Mathematics  
14 November 2006

**Statement for the Public Hearing****October 31, 2006****Proposed School of Earth, Society, and Environment (SESE)**

Donald J. Wuebbles  
Executive Coordinator of the proposed School

Robert Rauber  
Head, Department of Atmospheric Sciences

Bruce Rhoads  
Head, Department of Geography

Steven Marshak  
Head, Department of Geology

***Description of the School of Earth, Society, and Environment***

The College of Liberal Arts and Sciences (LAS) proposes the formation of the School of Earth, Society, and Environment (SESE). The proposed School will include the Departments of Atmospheric Sciences, Geography, and Geology.

With 61 departments and other units, the College of Liberal Arts and Science has found the formulation of Schools to be a powerful means to enhance related research and academic programs and to increase interactions amongst faculty while at same time reducing the overall administrative burden of the College. The School of Earth, Society, and Environment will be the 5<sup>th</sup> School within the College.

***Why does it make sense to formulate this School?***

To start with, one needs to understand the three departments whose alliance will determine the focus of the School. The Earth is a complex and dynamic system, consisting of multiple physical, biological, and cultural components. Study of these components, and of interactions among them, provides the shared intellectual foundation of the Departments of Atmospheric Sciences, Geography, and Geology. Current academic pursuits in these departments cover a broad spectrum of sub-disciplines, ranging from those that address the basic science of the solid Earth and its gas/water envelope, to application of this basic science to determining the effects of human activities on our environment, to addressing the social science of cultures that inhabit the Earth's surface. In this regard, the research and teaching programs of the three departments and their associated disciplines serve as an essential intellectual component of any major university that strives to address emerging challenges of global change—in its broadest sense—that are developing in the 21st century.

The individual Departments in the School of Earth, Society, and Environment provide extensive leadership nationally and internationally in their respective disciplines. With the formation of the School, there is now an opportunity for new international leadership in interdisciplinary research, education, and public engagement that will make the School a key resource at many levels.



The School of Earth, Society, and Environment is aimed at maintaining well recognized strengths in core disciplines of the member departments, while also forming bridges among these disciplines to tackle important issues and problems that pertain to the Earth System and its human dimensions, e.g., the causes and responses to disasters like Hurricane Katrina and the science of and human impacts and response resulting from concerns about climate change. The School's national uniqueness comes from its cross-disciplinary education, research, and outreach that promote interactions between physical, natural, and social scientists in the three Departments. Already the nascent School has generated international visibility in the study of water processes in the environment through recent hiring and program development. Other research centers of excellence, such as a newly developing center in environmental policy, are growing out of interactions in the School.

Forging an alliance of the three departments, by establishing the School, provides a mechanism for creating a stronger, more visible unit in the LAS College, and provides a more visible focus for environment-related studies to serve LAS students. As such, the School will be able to serve as an intellectual focus for research and education in environmental studies and policy within LAS, and will help foster productive collaborations concerning these topics with units in other Colleges on the campus. The School will maintain both physical science and social science components, and thus will be able to anchor a flexible, interdisciplinary undergraduate and graduate curriculum that meets the needs of a diverse student body in LAS. At the same time, the School will ensure that students will continue to be able to specialize in core disciplines of the departments comprising the School, both at the undergraduate and graduate level. Thus, the departments will continue to offer focused advanced degrees in their respective disciplines. Finally, the School will also serve as an anchor for discipline-based and interdisciplinary research centers and programs that will provide the flexibility and critical mass to address evolving research directions. The School will be unique on the national scene, both because of the specific mix of disciplines—including physical and social science—that it will incorporate, and because of its leadership in multidisciplinary research both within and outside the university.

There are already strong signs of the potential success of the School. Since March, when the College began coordinating the three departments as a School, we have had the following accomplishments:

- LAS and the Faculty Senate have both now approved the interdisciplinary undergraduate major in Earth System, Environment, and Society (ESES) that will be operated by the School.
- The Center for Water as a Complex Environmental System being led by the School is resulting in many proposals to NSF and other agencies and organizations. For example, we led a \$2M proposal to NSF for formation of a hydrological synthesis program. Discussions are well underway towards formulating additional multidisciplinary research centers within the School.
- We led and would be the home for a \$3M IGERT program proposal submitted to NSF for a Ph.D. program emphasis on water-related environmental research.
- This year, we have added four faculty that will have strong cross-disciplinary ties within the School. Two new searches are currently underway to further increase the interactions within the School.



- We are working closely with LAS and the campus towards developing resources to bring the School and its three departments together into a renovated Natural History Building. An architect firm has been hired by the campus to analyze specifically what needs to be done with NHB to make it happen..

Finally, we point out that there are significant logistical advantages to the three departments. Already we have seen the benefits of having a combined financial operation, as it has been able to employ staff with greater expertise than any of the departments could sustain on their own. Further, we are embarking on a plan to move Geography and Atmospheric Science into the Natural History Building, where Geology already resides. Thus, students will benefit by being in broader academic community than three small departments can sustain, and in the combined facility, there will be more efficient usage of facilities such as the computer lab, the GIS lab, and the Library. The move, and its benefits, would not be possible without the development of the School.

### **Why not just combine the departments into one?**

Atmospheric Sciences, Geography, and Geology are all well established disciplines with distinctly different intellectual cultures and traditions. While certain components of the different departments overlap with comparable components of other units, others do not. It makes a great deal of sense to maintain department status to allow disciplinary-specific programs to thrive, while at the same time developing a School to further enhance cross-disciplinary and interdisciplinary capabilities.

### ***Why the name School of Earth, Society, and Environment?***

Each word in the title of the School was chosen carefully as a result of lengthy discussions with the faculty in the three departments. These terms reflect what we do. Earth comes from the links across the Earth sciences in the School, Society from the interactions with the human dimensions throughout the School and especially from the studies of humanity and culture within the social geography component of Geography, and Environment from the important role our disciplines play in the study of our planet and the effects humanity has on our natural world, from a combined geology, atmospheric science, and geography perspective.

### ***What about overlap with other programs at UIUC?***

The discipline-specific aspects of the three departments to be in the School are not duplicated by other units. Similarly, new interdisciplinary programs in the School will have a distinctive focus on interconnections among earth, societal, and environmental systems and therefore will not overlap with programs of other units.

However, there are a number of other programs at UIUC that do have interests in environmental research and education. Two of these, the Department of Civil and Environmental Engineering in the College of Engineering and the Department of Natural Resources and Environmental Sciences in the College of Agricultural, Consumer and Environmental Sciences, also have the term Environmental, in their title. As with these other programs, our three departments have a strong interest in the study of the environment. Our hope is that the School's formation will, in fact, lead to increased interactions and collaborations with those with common interests. But in our case, this



interest derives from a foundation in the Earth sciences (geology, atmospheric science, and geography) – an approach that is not the basis of work in CEE or NRES. We see our research and academic interests as complementary to these other programs and not in conflict. In fact, we are working together with faculty of these departments already in developing new research proposals and joint research programs and some of our faculty have affiliated positions with these other departments. The Department of Civil and Environmental Engineering has written a letter in support of the School.

The School of Earth, Society, and Environment should help us all by serving to bring additional recognition to the campus for the strengths in the study of the environment that exist here.

**What are the additional costs to the campus?**

The only additional cost of consequence is the summary salary that LAS provides to the Director (Executive Coordinator until the School is approved). The additional resources that will result from the School far outweigh those additional costs. Eventually, there may be savings in staff costs because of a more efficient business operation compared to that in three relatively small departments.



Date: Wed, 1 Nov 2006 11:50:36 -0600  
To: Abbas Aminmansour <AAmin@uiuc.edu>  
From: Steve Marshak <smarshak@uiuc.edu>  
Subject: Earth School hearing comments  
Cc: Bob Rauber <r-rauber@uiuc.edu>, brhoads@uiuc.edu,  
Don Wuebbles <wuebbles@atmos.uiuc.edu>, kirkpat@uiuc.edu,  
smangels@ad.uiuc.edu  
X-Spam-Score: 0  
X-Spam-Details: rule=cautious\_notspam policy=cautious score=0 mlx=0 adultscore=0  
adjust=0 reason=mlx engine=3.1.0-0610180000 definitions=main-0611010024  
X-Spam-OrigSender: smarshak@uiuc.edu

Dear Abbas,

As you requested, here is a brief summary of my comments from the hearing yesterday concerning development of the School of Earth, Society, and Environment. I have also added some additional points.

1) All aspects of the School's development so far have proven to be positive for the individual departments. We have seen improvement in resources and services, and in opportunities for hiring. Also, we have been authorized to develop a plan for facilities improvement. I am convinced that none of this would have happened if the three departments had not proposed the development of the School. Small, isolated science departments cannot survive in the context of a huge university, and until the School began to take form, our three departments had endured many years of erosion. I believe that to prevent the establishment of the School would have severe negative impacts on the departments. This would be bad for the University, for our disciplines are integral to the mission of a major university.

2) The push to develop the School came from the departments, though the College has encouraged and aided the process. In other words, establishing the School is something that the departments and the College want to do. Nearly all faculty in the departments have bought into the idea. I have spent quite a bit of time discussing the plan with geology alumni as well, and they are now on board.

3) We have been working on the development plan for the School for a few years now. It took this long so that we could address faculty, alumni, and administration concerns. The plan that we have developed is what we believe to represent the best approach. We want the School to consist of three allied departments, with some shared goals but with sufficient independence to maintain our individual departmental agendas. Merging our units into a single department would not work -- it would lead to dissatisfaction among faculty and students, and would lead to alienation of our alumni.

I would like to add that as far as I can tell, the only uncertainty about the value of the proposed School seems to come from NRES. I can't say that I understand the basis for their uncertainty. It is not our intent or desire to duplicate what NRES has established.



We do not intend to be a strictly "environmental science" department, nor do we intend to be a biology-based department. In fact, environmental issues will be only one of many academic directions that the School will pursue. But environmental issues are important enough that they must be addressed from a variety of perspectives, and thus from a variety of different units. The approach that NRES has taken is certainly valid and valuable. But it is very different from the approach that we are taking. A unit that emerges from soil science, crop science, horticulture, forestry, etc. (as NRES has) is not the same as a unit that emerges from geology, atmospheric science, and geography (as our School has). To a large extent, we will be working on different problems, tapping different funding sources, and offering different courses. And if there is some overlap in interests, that should be viewed as a plus, for the University administration has been emphasizing the need for building cross-disciplinary initiatives.

It is also important to emphasize that there is minimal overlap between the existing NRES major and our School's proposed interdisciplinary major. An undergraduate program that addresses biological aspects of the environment with an applied focus (as is offered by NRES) is not the same as an undergraduate program (the ESES major) that is designed to provide a general liberal arts degree. The School, through its component departments, will continue to offer focused majors in geology, geography, and atmospheric science.

Thank you for your efforts, and for the efforts of the senate committee, to evaluate our proposal.

Sincerely,

Stephen Marshak

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Stephen Marshak  
Professor and Head  
Department of Geology, University of Illinois  
1301 West Green Street, Urbana, IL 61801 USA  
Tel.: 217-333-7705 or -3542; Fax: 217-244-4996  
smarshak@uiuc.edu <http://www.geology.uiuc.edu/>

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