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Memorandum of Understanding

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**The College of  
Environmental Science and Forestry**

*and the*

**State University of New York**



*December 2000*

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**Market Niche/Distinctiveness**  
*Campus Role within the SUNY System*

The College of Environmental Science and Forestry (ESF), founded in 1911 and located in Syracuse, is the only college in the country with academic programs focused exclusively on the natural environment. As befits its tightly focused mission, the College itself is small, but it benefits from its special relationship with Syracuse University (S.U.). ESF students have since its inception been able to enjoy the best of two kinds of undergraduate education—the intensity and intimacy of a small specialized institution and the breadth of educational opportunities offered a large comprehensive campus.

The College’s charter establishes it as the State University institution which is dedicated to “teaching in the science and practice of environmental science and forestry in its several branches.” From this charter is derived the College’s self-described Mission:

*The mission of the State University of New York College of Environmental Science and Forestry is to be a world leader in instruction, research and public service related to:*

- *Understanding the structure and function of the world’s ecosystems;*
- *Developing, managing and use of renewable natural resources;*
- *Improving outdoor environments ranging from wilderness, to managed forests, to urban landscapes; and*
- *Maintaining and enhancing biological diversity, environmental quality and resource options.*

The significance of this mission is illustrated by the language of the Policy Direction section of the System's *Guidelines for the Consideration of New Undergraduate Degree Programs in Environmental Science/Studies*:

*In articulating policy guidelines on undergraduate degree programs in environmental science or environmental studies the formal mission of the College of Environmental Science and Forestry, and the University's significant investment in that institution's resources and expertise must be acknowledged.*

Likewise, the Policy recognizes the primacy of ESF in the development of new Environmental Science/Studies programs. The exact definition of "primacy" is discussed in Section 4.0, below.

## **Projected Institutional Position and Benchmarks of Success**

The College is unique within the State University system, and indeed within the world, in its focus on environmental science, forestry, and related professional studies. It seeks first to maintain its high selectivity in undergraduate and graduate admissions, its unique strengths in forestry and environmental research programs, and its notable record of achievement in service to the citizens and industries of New York State through its continuing education and extension activities. At the same time, ESF faces a number of challenges, and plans to move carefully to meet them:

- Modest enrollment growth in order to forestall revenue loss from the Performance-Based Budgetary Model;
- Ongoing assessment planning within academic units;
- Maintenance of a high degree of involvement in collaborative activities with other campuses, as well as exploration of new ways in which ESF can share its expertise with other institutions in the System, and *vice versa*;
- Development of program thrusts in areas where the College already has significant resources that can be expanded on: urban environments; water quality and quantity; renewable materials; environmental chemistry; environmental communications and policy; remote sensing and geospatial modeling; and
- Enhanced recruitment of transfer and minority student populations.

### **1.0 Enrollment/Admission Selectivity**

#### *1.1 Enrollment growth*

ESF enrollment in the fall of 1996 was 1,743 headcount students—1,185 undergraduates and 558 graduates for a total AAFTE enrollment of 1,424. Since 1987, the financial concerns associated with balancing the demand for programs against the cost of instruction (particularly expensive accessory instruction from Syracuse University), led the College to restrict the growth of undergraduate enrollment. The full implementation of the Performance-Based Budgetary Model, however, would result in a cut in ESF's state support if enrollment should be maintained at the 1996 level. The College has therefore proposed a plan to grow to 1,998 headcount (AAFTE: 1,688) by 2003 while maintaining its selectivity standards. This new enrollment target will be regularly evaluated with respect to ESF's ability to continue attracting academically superior students and maintain the intense laboratory and field education that have been the hallmark of an ESF education.

The College's enrollment projection is as follows:

	Fall 1999 (Actual)	Fall 2000 (Approved)	Fall 2001 (Planned)	Fall 2002 (Planned)	Fall 2003 (Planned)	Fall 2004 (Planned)
Undergraduate						
FT First	132	175	175	175	180	180
FT Transfer	245	270	270	270	270	270
FT Cont & Return	742	680	732	777	798	800
Total FT	1,119	1,125	1,177	1,222	1,248	1,250
Total PT	66	110	110	110	110	110
<b>Total Undergraduate</b>	<b>1,185</b>	<b>1,235</b>	<b>1,287</b>	<b>1,332</b>	<b>1,358</b>	<b>1,360</b>
Graduate						
FT	290	305	315	315	325	325
PT	290	315	315	315	315	315
<b>Total Graduate</b>	<b>580</b>	<b>620</b>	<b>630</b>	<b>630</b>	<b>640</b>	<b>640</b>
<b>Total Headcount</b>	<b>1,765</b>	<b>1,855</b>	<b>1,917</b>	<b>1,962</b>	<b>1,998</b>	<b>2,000</b>
<b>Total AAFTE</b>	<b>1,491</b>	<b>1,563</b>	<b>1,617</b>	<b>1,655</b>	<b>1,688</b>	<b>1,689</b>

*Note: Enrollment goals may be affected by external factors such as changing economic conditions, tuition increases, and fiscal constraints. Official enrollment targets that are the basis for the University's budget model are set annually through dialogue between campuses and System Administration, and may differ somewhat from the above.*

## 1.2 Student mix

The College intends to maintain the current percentage of graduate enrollment at about 32 percent through 2004. This is a lower percentage than historical levels, which have reached 40 percent. The actual size of graduate enrollment at any given time will be determined by the number of the faculty, their success at research funding and the College's promotion of professional degrees as well as science degrees.

The College has changed from a predominantly white male student body to approximately 39 percent female student body. It has set the goal of having a 10 percent minority graduating class by 2000, which will not be met. The College is in the process of implementing procedures to increase minority recruitment, improve advisement and develop better career counseling.

Transfers have declined steadily from 1990 to 1997 (450 to 289). Some of this decline is due to an increase in ESF's own Freshman class, but some seems to be the result of feeder institutions trying to hold on to their own students. In line with plans for the next decade, ESF is taking several steps in the years 2000 and 2001 to improve its transfer numbers, primarily by re-building its connections to feeder campuses. Such steps include: 1) 20 percent more visits to feeder campuses in fall semesters, followed by more each spring; 2) events on the ESF campus tailored to counselors and faculty at feeder colleges; 3) relationship-building with individual faculty in key program areas at articulating campuses; 4) planned expansion of program-specific articulation arrangements; and 5) increased communications with potential transfer students in the Inquiry Pool.

- The College will actively carry out its planned programs aimed at boosting transfer opportunities and programs with other SUNY campuses.

### 1.3 Recruitment

The College's undergraduate students come primarily from New York and its graduate students from around the world. While not seeing itself as a "regional" campus, a high proportion of undergraduates presently come from Central New York. As undergraduate enrollment is expanded over the next five years, the College will attempt to increase the number of out-of-state students, particularly students from specialized high schools for science, mathematics, engineering, and environmental studies.

ESF maintains targeted recruiting in the Greater New York City area for minority students, including frequent visits to high schools, collaborative programs with science teachers and counselors, and campus visits for prospective students and their parents and teachers. A new program of "ESF Ambassadors"—minority alumni who reside in the NYC area—has just been established. Scholarship monies from the ESF College Foundation have been earmarked for minority students.

With increasing usage of Web-based college location services by potential students, the College will need to become more active in ensuring that its name, and accurate and current information about its programs are readily available via both education-oriented and generic search mechanisms on the Internet.

- The College will, with System Administration, explore the idea of developing a comprehensive, national campaign highlighting its excellence and the special nature of its programs. Electronic outreach processes will be at the forefront of mechanisms utilized.

### 1.4 Level on selectivity matrix

The College is currently in Group 2 on the State University Selectivity Matrix. First year students in the fall of 1997 had SAT's averaging 1183, with the middle 50 percent in the 1100-1280 range; 91 percent had high school averages above 85 percent. The College plans to maintain admissions at the Group 2 selectivity level.

	Selectivity Group	Fall 1999 (actual)	Fall 2000 (planned)	Fall 2001 (planned)	Fall 2002 (planned)
Regular Admits who have an SAT Score and a High School Average	Total	100.0 %	100.0 %	100.0 %	100.0 %
	In Group 1	26.4 %	37.5 %	30.0 %	30.0 %
	In Group 2	49.1 %	56.3 %	50.0 %	50.0 %
	In Group 3	23.6 %	6.3 %	10.0 %	10.0 %
	In Group 4	0.9 %	0.0 %	0.0 %	0.0 %
	In Group 5	0.0 %	0.0 %	0.0 %	0.0 %
Special Admits (EOP or Other Risk) as a Percent of Total First-Time Full-Time		11.4 %	8.6 %	10.0 %	10.0 %

### 1.5 Comparisons with selected benchmark institutions

ESF is a highly specialized institution (Peterson's *Guide to Competitive Colleges 1997-98* describes ESF as "the only college in the country with academic programs focused exclusively on the natural environment") which makes identification of benchmark institutions somewhat challenging. There are large comprehensive institutions that offer some of the same programs as ESF, but the differences in scale make comparisons difficult. Institutions of comparable size do not have the same specialized mission, nor do they share the mix of undergraduate, graduate, and research programs.

An analysis carried out in conjunction with previous SUNY budget model (i.e., RAM) deliberations identified institutions that share attributes with ESF including: appropriate accreditation of programs, memberships in national science and engineering associations, and federally funded research activities. Two universities were identified as being most similar to ESF on these dimensions: North Carolina State University and the University of Washington.

In its survey of fall 1997 accepted students, the College found that nearly 90 percent of the respondents indicated that ESF was their first choice college. Other institutions the College's students typically consider include: Cornell University; the four SUNY University Centers; SUNY Colleges at Geneseo, Oswego, and Plattsburgh; Pennsylvania State; Vermont; Syracuse; and Rochester.

The following table, based on data from the College Board Survey for the 1999-2000 academic year, allows for comparisons between ESF and some of the benchmark institutions mentioned above:

	<b>Environmental Science and Forestry</b>	University at Buffalo	SUNY Binghamton	Syracuse University	University of Rochester	N. Carolina State	University of Washington
FT Undergraduate Enrollment	<b>1,116</b>	13,256	9,134	10,395	4,261	17,430	21,232
Acceptance Rate	<b>50%</b>	71%	41%	58%	62%	69%	65%
SAT (25/75 percentile)	<b>1040-1240</b>	1010-1230	1120-1310	1080-1290	1210-1400	1050-1260	1030-1280
HS GPA % > 3.0	<b>43%</b>	48%	98%	94%	92%	95%	97%
% Fulltime faculty	<b>84%</b>	73%	65%	58%	89%	95%	79%
Freshman Retention	<b>85%<sup>1</sup></b>	82%	92%	90%	93%	--	90%
Graduation Rate (6-year)	<b>67%<sup>1</sup></b>	60%	82%	71%	76%	--	70%

<sup>1</sup>SUNY IR Attrition and Retention Survey, Fall 1998 (Report 98-10)

- Beginning in 2001, the College will engage in a strategic planning process that will incorporate useful focused measures for comparisons within SUNY, throughout New York and the Northeast, as well as nationwide.

## **2.0 Student Outcomes**

### *2.1 Student life*

In addition to providing conventional student services and campus life programs, the College capitalizes on its small size and the accessibility of its faculty to promote students' professional and personal development. ESF is a research-centered teaching institution where undergraduates are encouraged, and in some programs required, to participate in faculty research. Student clubs and organizations are centered on ESF's special mission and students' pre-professional interests. A great deal of responsibility for self-governance is given to students. Student Council administers the bulk of students programming on campus, and students manage and staff key events like Orientation and Commencement.

Additionally, ESF students benefit from the resources and diversity of a major national research university, neighboring Syracuse University. ESF students may participate in all S.U. organizations, events and services, as well as all social, academic enrichment, and student government programs.

### *2.2 Retention/graduation rates*

ESF has consistently surpassed SUNY-wide graduation rates, both freshmen and transfers. The first freshmen classes admitted in the early '90s were small and most highly selective, and graduation rates were comparatively high; as freshmen classes have grown, graduation rates have moderated, but have always stayed well above SUNY freshman graduation rates. For example, the six-year graduation rate for the 1992 cohort was 67.16 percent, compared to the SUNY-wide rate of 60.39 percent. As ESF's freshman classes grow to 175 and above, the College will carefully monitor progress to degree completion. The performance standard will be to exceed the SUNY-wide graduation rates for first-time full-time baccalaureate students at Selectivity Level II campuses.

Graduation rates for ESF transfer students have also surpassed SUNY-wide levels—typically exceeding 80 percent. The performance standard will continue to be to exceed SUNY-wide graduation rates for transfers.

The current and projected retention and graduation rate of ESF's students (first-time, full-time) averages appear below:

	<b>Current</b>	<b>3-year goal</b>	<b>5-year goal</b>
<b>First-year retention rate</b>	85.48% <sup>1</sup>	85.0%	85.0%
<b>4-year graduation rate</b>	47.77% <sup>2</sup>	50.0%	50.0%
<b>6-year graduation rate</b>	67.16% <sup>2</sup>	75.0%	75.0%

Source: SUNY IR, *Attrition and Retention Survey*, Fall 1998 (Report # 98-10); <sup>1</sup>Fall 1997 cohort; <sup>2</sup>Fall 1992 cohort

### 2.3 *Student/alumni satisfaction*

ESF enjoys some of the highest scores on the System-wide Student Opinion Survey, with a general trend of slight improvement since the Survey was first conducted in 1988. In 1997, the College achieved a number of strong scores, both in comparison to the System as a whole, and to the 1994 scores it received. In the former area, ESF ranked above the average in 20 of 24 categories, and had notably high scores in overall satisfaction, academic classroom experience, student voice, student-faculty/staff relations, student growth & career preparation, and student harmony. Likewise, there was improvement in 15 of the 24 categories since 1994, with especially strong improvement in student harmony and diversity/multiculturalism.

By the same token, however, nine areas showed a decline in scores, including library services/facilities, and three areas were ranked below the System average (academic advising, diversity/multiculturalism, and special services).

The results of the 1998 SUNY Alumni Outcomes Survey, which sampled 50 percent of the classes from 1991 and 1994, reveal a high level of satisfaction among responding ESF graduates. Their overall rating of the College of 4.4 on a five-point scale is very positive, and compares favorably to the average for all SUNY institutions of 4.23. ESF fared well both on an absolute scale and in comparison to System means in many areas, including the quality of academic programs (4.41 versus 4.07), opportunities for student involvement (4.13 versus 3.67), opportunities for faculty/student interaction, and a strong sense of the individual belonging on this campus. Especially important is that fact that 81.2 percent of the respondents would attend again, and 98 percent would recommend the College to someone else.

- The College will continue to monitor student and alumni survey results in the future in order to maintain or improve on its already excellent performance. Special attention will be paid to its ranking in the library services/facilities category, reflecting the importance of the library system in an institution of ESF's stature.

#### 2.4 *Post-graduate success*

Consistently high rates of employment and admission to graduate study are hallmarks of ESF. More than 75 percent of graduates are employed full-time within one year of graduation, and an additional 20 percent go on to graduate school. As a special-focus professional school, ESF's post-graduation standards must be maintained as a key part of its mission.

As the College's programs become more diverse, and as its student body grows in number and heterogeneity, there will be need to carefully track its students' post-graduation experiences. The three-year SUNY Alumni Outcomes Survey and ESF's own annual survey of graduating seniors will provide important information on the impacts of its programs.

- ESF will gather information on the post-graduate successes of its alumni, and will work with System Administration to integrate the data into evolving System and ESF-specific public outreach campaigns.

#### 2.5 *Employer satisfaction*

Employer satisfaction is a continuing and important part of ESF's assessment of its performance. The employability of its graduates and their success on the job is one measure of the effectiveness of an ESF education. Several mechanisms are used for obtaining impressions of employer satisfaction, including program advisory boards composed of professionals, who may well be employers of its graduates. The accreditation review process for several of the College's programs include interviews with employers as part of the accreditation process. Less formal means include interviews with corporate recruiters when they are on campus and informal interviews of individual employers who have ESF graduates on their staffs.

- ESF will develop mechanisms to gather and utilize information about employer satisfaction, within, for example, a coordinated effort to develop a network of environmental science/studies programs across the System.
- ESF will actively analyze such information and provide appropriate input into the economic development programs that the State University has throughout the state.

#### 2.6 *Assessment planning*

ESF began work on an assessment initiative in 1988 in response to a System directive that campuses develop methods for assessing learning outcomes. During the 1997-98 academic year, the College began an inventory and evaluation of the campus-wide assessment project. This effort includes identification of learning outcomes assessment projects specific to each academic unit. Appropriate changes in curriculum, instructional methods, advising or other areas will be designed and implemented after collection and analysis of data relevant to the project. For each change that is implemented, a new assessment project will be initiated to evaluate its effectiveness.

In addition to the assessment of learning outcomes at the academic unit level, some campus-wide assessment projects have been completed. The teaching of calculus and the campus-wide writing program are two examples of areas of review.

Constant review of courses and curriculum is a key activity at ESF. Landscape Architecture, Environmental Resources and Forest Engineering, and Forestry are required to examine their programs during periodic accreditation reviews. Paper Science and Engineering receives similar attention from the Syracuse Pulp and paper Foundation. These set a standard for curriculum reviews across the campus.

A principal measure of faculty effectiveness in supporting high academic standards is the quality of individual courses. Course evaluations are taken seriously by faculty governance, which has assumed lead responsibility for continually revising course evaluation procedures and instruments. While the primary purpose for course evaluation is for instructors to improve the effectiveness of their courses, they are also used as supporting evidence in the tenure evaluation process.

- As part of the overall assessment plan, ESF will include a comprehensive review of all academic programs on a five-year cycle.

### **3.0 Faculty Development and Scholarship**

#### *3.1 Faculty recruitment*

ESF regards the recruitment of faculty who are both excellent scholars and committed teachers as an essential component of high academic standards. Competition for faculty and sponsored research funds is generally with Research I institutions having a nationally recognized responsibility for forestry in its broadest sense. Recently, the College has faced a significant number of faculty retirements but has chosen to use this turnover as an opportunity to recruit faculty who will rank among the nation's leaders in their respective fields. In order to attract this caliber of faculty, the College offers significant "start-up" packages to new faculty.

While the College will not be branching into totally new academic areas in the near- to mid-term, new faculty recruitment will take into account program thrusts articulated below (see §5.1), and research priorities and opportunities associated with those program thrusts.

The College has instituted a mentoring program—within each academic unit as well as College-wide—to assist new faculty in reaching their full potential as scholars and teachers.

#### *3.2 Faculty review, promotion, and tenure*

As befits a research institution, ESF's promotion and tenure procedures are characterized by high standards including external review of faculty scholarship. As part of its faculty review process, ESF also uses student course evaluations to evaluate teaching effectiveness. Periodic reviews of programs (see §2.5) will also help maintain academic standards, test the quality of

internal planning, and identify vulnerabilities and possible directions for enhancement. System Administration applauds the College for adhering to high standards meant to ensure academic excellence.

ESF has expressed some concerns regarding faculty workload: since the College involves its students in intense, hands-on, experiential education that is demanding of faculty time, this must be accounted for in measures of workload. In addition, faculty respond to numerous inquiries about plant problems, whether in a backyard, throughout a neighborhood, a city, or a large forest property—as part of their service obligation.

- ESF will continue to uphold high standards in its longitudinal assessment of faculty activity that extends from the initial letter of appointment through various stages of promotion and career.

### 3.3 *Quality and quantity of scholarship*

Research at ESF generates knowledge and technology to support the prudent and sustainable use of forest and related natural resources, preserve and improve environmental quality, and enhance economic vitality of the natural resource-based industries. A priority is to conduct research that helps citizens of New York make the most effective use of the state's resources and environment in economically competitive and environmentally sound ways.

Research areas at ESF are closely linked with its academic programs. Accordingly, emerging research priorities will mirror academic program thrusts as articulated below (see §5.1).

ESF's total research and development expenditures, as reported in the National Science Foundation/SRS Survey of Research and Development Expenditures at Universities and Colleges (see § 3.4), has remained relatively flat at approximately \$21-22 million over the past five years. Sponsored activity expenditures through the SUNY Research Foundation for 1998-99 reached \$8.5 million (approximately \$64,000 per full-time faculty), representing less than half the total research and development expenditures reported by NSF.

The College plans to grow its research enterprise substantially over the next five years as follows:

- The College will achieve a SUNY Research Foundation research expenditure level of \$10 million per year by 2001-02, and \$12.5 million by 2005.
- The College's total R&D expenditures will reach \$31 million (as defined in the NSF/SRS Survey) by 2005, with federally supported research expenditures of approximately \$5.5 million (see table in §3.4 for 1998 baseline funding levels).
- ESF will maximize its external funding by fully reporting all sponsored activity through the SUNY Research Foundation, thereby enriching its research enterprise with SUNY research-match dollars.

### 3.4 Comparisons with benchmark institutions

ESF has strength in its basic science faculty; however, it is disadvantaged in standardized benchmarking studies due primarily to its limited size and, to a lesser extent, to its mission that requires extensive publishing of applied outreach as well as the publishing of fundamental science and traditional scholarship. Nonetheless, the College plans to improve its National Research Council rankings by at least 10 percent over its last rankings, in the next two NRC efforts.

ESF is credited with having the 14<sup>th</sup> highest level of research activity of all New York State institutions of higher learning. However, at a national level the College's total research and development activities place it 172<sup>nd</sup> among research universities and colleges.

Institution	Rank	Total R&D Expenditures (\$ in thousands)	Federal Expenditures (\$ in thousands)
University at Buffalo	55	151,650	76,037
University at Albany	129	50,568	33,894
Rensselaer Polytechnic Institute	143	38,560	21,774
U. Maryland Center for Environmental Science	167	24,038	7,440
<b>Environmental Science and Forestry</b>	<b>172</b>	<b>22,036</b>	<b>2,715</b>
Binghamton	181	20,754	6,205
Colorado School of Mines	182	20,681	8,694

Source: National Science Foundation/SRS, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1998

### 4.0 Intercampus Collaboration

Because of its specialized characteristics and legislatively mandated mission, ESF may have more ties with other SUNY campuses than any other college or university—relationships that tend to be thematic rather than those resulting from geographic proximity. The environmental program policy guidelines of the State University note ESF primacy in the development of new Environmental Science/Studies programs. Such primacy involves, inter alia, *leadership in the development of collaborative arrangements with other State University campuses, which are encouraged to explore with the College collaborative undertakings involving instruction at all levels, as well as cooperative research and public service.*

In the area of complementary academic programs, three factors influence intercampus collaboration: 1) ESF attracts the majority of its undergraduate students as transfers from other SUNY campuses, in many instances under the purview of the more than 50 articulation agreements in place with other institutions; 2) there are a number of joint degree programs in place with several SUNY campuses as well as Syracuse University, many of which, however, have proven to be unsuccessful; and 3) ESF maintains a long tradition of collaborative research and public service contacts with other colleges and universities within and outside SUNY.

An area of intercampus collaboration that is yet to be developed in any formal way relates to the potential contributions of the College to economic development in New York, building on its longstanding work in this field through coordinated linkages with other SUNY campuses.

- ESF will work with System Administration in the identification of opportunities for intercampus collaboration, and the development of mechanisms to put such linkages in place.
- System Administration will ensure that ESF is closely involved with newly developing economic development programs at the System level.

#### *4.1 Joint academic programs*

ESF has a variety of joint degree programs with State University campuses as well as with Syracuse University. The College will vigorously pursue collaborative academic program arrangements in formats appropriate to providing efficient student access to its specialized faculty, resources and programs. Regarding Environmental Science and Environmental Studies, promising discussions are underway with Stony Brook and New Paltz. Also, for example, a joint doctoral proposal is moving ahead with Syracuse University and the Health Science Center at Syracuse in Structural Biology, Biochemistry and Biophysics. Other joint degree programs with Syracuse University in environmental law, management, and education have been successful.

- System Administration will be proactive in stimulating the development of such programs.

#### *4.2 Articulation*

ESF attracts a majority of its undergraduates as transfers from other State University campuses. This relationship is a natural consequence of the majors offered by ESF not being offered at other State University campuses, and enables ESF to focus a higher proportion of its faculty and programs on its strengths in science and professional education. The College has formal articulation agreements with 50 other institutions, most of them within the State University System.

- ESF will maintain its present level of articulation with other SUNY institutions and expand on it where feasible—both quantitatively and qualitatively. The linking of ESF's resources to environmental programs throughout the SUNY System and elsewhere via tailored articulation agreements will be a goal of the College and System Administration.

#### *4.3 Other cooperative activities*

ESF has a tradition of collaborative research and service contacts within and outside of the State University, for example the Great Lakes Research Consortium, which is centered at ESF

but involves collaboration with nine SUNY campuses, Syracuse University, Clarkson University, and others. More than 150 researchers and faculty participate in Consortium projects and hundreds of students have undertaken Great Lakes research.

Research collaboration between ESF faculty and other campuses will continue to grow as new faculty are added and research thrusts developed (see below, §5.1). New relationships will also emerge from the resolution of such issues as increasing competition between ESF and other campuses intending to develop programs in environmental science or studies.

ESF has been participating in several System-wide distance learning activities, including delivering courses to military personnel in the Watertown-Fort Drum area, ENGINet, the SUNY Learning Network (SLN), and the I-81 Consortium. ESF is the lead institution in the Environmental Studies Project, which develops modules that can be acquired by any high school teacher or student with Internet access.

The College as an individual entity has been involved in many economic development activities, especially in the area of forest products and the energy industry in New York State. The College is interested in exploring the potential for greater collaboration on economic development with other campuses, especially, but not limited to, the Adirondack region.

- The College will, in conjunction with System Administration, actively explore cooperative opportunities in a range of areas, including, but not limited to, distance learning, economic development, and international education and research.

## **5.0 Academic Program Directions**

### *5.1 Undergraduate and graduate program thrusts*

The College does not anticipate making any major program changes during the next five years. It has, however, launched an initiative to develop interdisciplinary program thrusts that will build on current faculty strengths, be attractive to increasing numbers of potential students, and be consistent with emerging societal needs.

*Urban environments.* ESF will continue to add to its historic focus on wild lands a more urban orientation, ranging from issues of urban forestry to environmental justice and equity. The science which has allowed ESF to make advances in the management of forests will now be applied to urban environments. For example, in the formative stage are a Collaborative in Urban Design and Planning with the City University of New York and several sponsored projects dealing with watershed issues affecting the New York City water supply.

The mission enhancement funding received by the College in support of its new Urban Initiative in New York City will go far in the establishment of ESF as a world leader in urban environmental programs.

*Water quality and quantity.* ESF will expand its focus on issues involving the increasing importance of water quality and quantity to economic development in New York. In the

faculties of Forestry, Chemistry, Environmental and Forest Biology, Landscape Architecture, and Environmental Resources and Forest Engineering, ESF has a combination of water resource scholars without match in the state.

*Renewable materials.* The scientific advances made in the design and manufacture of wood products and paper need now be applied to the foundational components of wood, a renewable resource.

*Environmental chemistry.* ESF founded the discipline of chemical ecology. Building on this model, the College seeks to expand the potential that lies at the interface between chemistry and biology. New facilities in the Edwin C. Jahn Laboratory will help ESF in this area.

*Environmental communications and policy.* ESF will expand its efforts in bringing science to bear on public policy. There is a necessary link between a well-functioning public policy process and a citizenry educated in environmental issues. The College will address this link through expanded programs in environmental interpretation and communications with an emphasis on the concepts of risk, costs and benefits in developing effective public policy. In addition, it will examine the potential for a collaborative role in the training of elementary and secondary teachers in using the environment as a focus that would enhance students' interest in the biological, physical, quantitative and social sciences.

*Remote sensing and geographic information science.* The environment is inherently spatial, or geographic, and better consideration of spatial relationships and characteristics may revolutionize understanding and management of environmental processes and conditions.

Realization of these programmatic thrusts may take different forms, such as sub-specialties within current academic programs, new academic programs, formation of centers, or expansion of existing programs. ESF's current priorities for replacing faculty who retire consider the need to accommodate these new thrusts. Also, the recently constructed Jahn Laboratory and the proposed renovations of Baker Laboratory and Marshall Hall will give ESF the facilities to support the increases in enrollment associated with these areas of emphasis.

These and any other academic programs the College develops in the future will be reviewed for consistency with mission, demonstrated market need, and evidence of academic quality. As the College adds new programs it will continue to review existing programs for relevancy and sufficient enrollment strength. When appropriate, the College will consider deactivation and/or discontinuance.

- The College will work closely with System Administration to develop and expand the above-noted programs through cooperation with other SUNY institutions, as well as agencies of New York State government and the business community.
- The College will provide to System Administration more detailed information on the available skills and resources it is now able to provide in each area, so the planning process underlying future growth can begin immediately.

### *5.1.1 General education*

The College has been working with the Provost's Advisory Council on General Education in developing a general education program that meets the requirements of the Board of Trustees' Resolution 98-241, and will have a program in place for first-time students entering in fall 2000.

### *5.1.2 Teacher education*

ESF could play a particularly important role in the preparation of secondary science teachers. In view of the existing and projected shortage of teachers in New York State, SUNY System Administration encourages ESF to

- Develop new articulation agreements and jointly registered teacher education programs with sister SUNY campuses, including community colleges.

## *5.2 Responsiveness to local/regional/state needs*

Service to the community, state, nation and the industries with which ESF is associated has been part of the College's charter since the creation of the institution in 1911. This component of the educational program expresses itself in many forms. Among the least formal are enquiry response services via the Extension Information Office and frequent public speaking engagements by faculty; more formal modes include ESF's Organized Research Activities and the Office of Non-Resident Programs.

The latter conducts several dozen workshops and conferences each year, and will implement program enhancements to its continuing education as a way to meet the educational needs in the local area. It will expand distance learning access to people who otherwise could not take its specialized courses on campus because of schedule, campus location or other restraints. Areas of focus will include existing master's level certificates in Geographic Information Science, Environmental Decisionmaking and possibly new graduate level initiatives in Renewable Materials Science and Engineering and in Sustainable Development. These efforts would be greatly facilitated by System support for full participation by ESF in the ENGINet and the Strategic Partnership for Industrial Resurgence (SPIR) as they are envisioned for the next decade.

The College has also begun discussions with the corporate sector, non-governmental organizations, and state agencies on the role of SUNY in general and ESF in particular in remediating urban problems facing the state. Examples of activities include:

- Discussions with the Lt. Governor's office about the role of ESF in the work of its task force established by the Executive Order "Establishing the Quality Communities Task Force;"

- Working in up to three upstate communities with the National Audubon Society New York and the Niagara Mohawk Power Corporation in responding to requests for applications for Quality Community Demonstration Programs;
- Partnering with Niagara Mohawk in a plan to involve several SUNY campuses in a research and continuing education enterprise aimed at better solutions to solving Brownfield problems; and
- Conducting individual research projects dealing with bioremediation of toxic sites.

## **6.0 Infrastructure and Technology**

### *6.1 Facilities*

The College's campus in Syracuse is bordered by the S.U. Carrier Dome, other S.U. properties, and Oakwood Cemetery. These property constraints leave virtually no room for building expansion or surge capacity. With the exception of the Jahn Laboratory, there has been no major building or rehabilitation project in over 20 years.

The transfer of the Faculty of Chemistry to the new Jahn Laboratory in 1997 provided ESF with the opportunity to improve the program space in Baker Laboratory. Planning and design of a multi-phase \$23 million project to rehabilitate Baker Laboratory has been underway for several years, and the first construction phase of this project began in February 2000. When the rehabilitation of Baker Laboratory is completed, the building will accommodate several large classrooms with distance learning capabilities, an enhanced academic computing facility, and the Faculties of Construction Management and Wood Products Engineering and Environmental Resources and Forest Engineering. Without the improvement in program space that the Baker rehabilitation project will accomplish, the College's ability to meet its increased enrollment goals will be severely limited.

The current SUNY Five Year Capital Plan includes funding for approximately half of the total rehabilitation cost. Maintaining the Baker Lab project schedule and funding in the next Five Year Capital Plan is essential for ESF's enrollment plans and modernized academic computing services. Additionally, delays would seriously diminish the College's capability to expand key workforce training and economic development initiatives in its renewable materials thrust for the forest products industry and its remote sensing and geographic information science thrust for New York industries dependent on such information sciences. The inclusion of funding for ESF in the ENGINet and the revised SPIR in rehabilitated Baker Laboratory is central to the success of these economic development thrusts.

Two other important facilities projects are expected to have a positive impact on academic programs. In Marshall Hall, a project to provide a CAD instructional facility for the exclusive use of the Faculty of Landscape Architecture will begin in the summer of 2000. At the College's Ranger School Facility in Wanakena, NY, a design project is underway that will provide additional dormitory space, improve instructional space, and construct new kitchen and dining facilities. Construction on this \$4.5 million project is expected to begin in 2000-01.

## 6.2 *Academic technology*

The College strives to provide the most appropriate academic technology for its students, faculty and staff. Several key aspects of the College's plans for strengthening its academic technology are linked with facility improvement plans noted above (§6.1). Ongoing general software and hardware enhancements to support on-campus instruction are dependent on SUNY's Student Computing Access Program (SCAP) and Academic Equipment Replacement funds. Expansion of distance learning imported to or exported from ESF depend not only on the continuation of Educational Technology funds but also on the inclusion of ESF in the funding of the SUNY ENGINet. ESF aspires to import instruction on various general education topics and to export instruction to upper division and graduate students and practicing professionals throughout New York as well as to provide critical workforce training to professionals in industrial settings linked to the College's mission areas.

Of great importance, at ESF a high proportion of the SUNY allocated Research Capital Equipment Challenge Grant Program funds that are matched by non-State funds are used to equip facilities with the specialized contemporary high-end academic technologies essential for expanding the success of ESF's graduate and research programs. Nearly one-third of these technologies is computer and computer network-based and the remaining deal with advanced instrumentation to support excellence in science. While the initial sources of funding are directed by sponsors at specific research efforts, the majority of such academic technology investments also support graduate and advanced undergraduate instruction at ESF.

The advent of the SUNY Learning Network (SLN) has stimulated the development of a new paradigm of distance learning within the SUNY System. In the SLN program, campuses play one or more of three roles (course developer, course producer, or course user) and financial or administrative costs and rewards are allocated by formula. Thus, program usage is now truly System-wide.

As noted previously (§4.3) ESF is an active participant in the SLN. During the year 1999-2000, the College offered two courses and plans to increase the number of offerings in response to demand.

- ESF will develop a niche within the SLN system (e.g., as a producer of specialized programs within its area of primacy, as well as an originator and adopter) that will enable the concurrent maintenance of System-wide environmental programming of the highest quality, and maximization of intercampus collaboration and formal linkages.

The College is a member of the Library Automation Implementation Program (LAIP) and has expressed interest in joining the SUNYConnect initiative. The College can now begin planning its participation since a vendor for the project has been selected.

## 7.0 Mission Review Funding

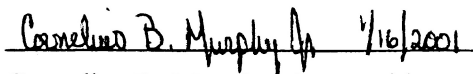
SUNY College of Environmental Science and Forestry has received a \$160,000 Mission Review funding award to facilitate changes in and enhancements to campus mission. This competitive award was based on the academic merit of ESF's proposal to:

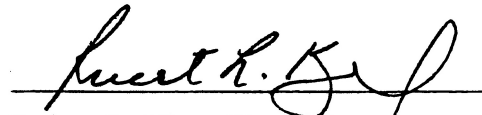
- Develop a new minor in Urban Environmental Science.

This award is contingent upon the College meeting the reporting and other requirements detailed in Appendix A. These reports will enable System Administration to better evaluate the strength and plausibility of future Mission Review funding proposals.

\* \* \* \*

This Memorandum of Understanding was developed jointly by the College of Environmental Science and Forestry and the State University of New York System Administration to provide guidance for planning the campus' future and a framework for gauging the achievement of its goals. Recognizing that individual institutions and the State University as a whole must be able to respond to changing circumstances, both ESF and System Administration will work together to realize the goals and objectives articulated in this document.

  
Cornelius B. Murphy, Jr., President  
College of Environmental  
Science and Forestry

  
Robert L. King, Chancellor  
State University of New York

## *Appendix A*

### **Mission Review Funding**

SUNY College of Environmental Science and Forestry has received a \$160,000 Mission Review funding award to facilitate changes in and enhancements to campus mission. This competitive award was based on the academic merit of ESF's proposal to:

- Develop a new minor in Urban Environmental Science.

This award will be made in two equal annual installments of \$80,000. First year funding is contingent upon an agreed-upon Memorandum of Understanding, the hiring of the half-time coordinator, and the submission of the curriculum<sup>1</sup> and implementation schedule for the minor. Second year funding is contingent upon the ESF meeting the reporting requirements detailed below.

#### *Reporting*

At the conclusion of each year for which the College receives Mission Review funding, ESF will submit a report containing a narrative section describing, as appropriate:

- The learning outcomes of the new courses in Urban Environmental Science, Sustainable Systems, and the capstone experience;
- The impact of these curricular elements on the development of a model of how to most effectively integrate General Education into the education of students who are career-motivated;
- The progress that has been made in including an urban component in courses that are taken by students who do not choose to select the minor; and
- The expansion of the ESF's relationships with other SUNY campuses and the progress that has been made in coordinating System-wide expertise in urban environments and sustainable development.

a data section indicating (or progress towards, as appropriate):

- The enrollment and student demographics for the Summer Urban Science Retreat;
- The measures and data that describe ESF's progress in meeting its goals of:
  - Attracting a more diverse student body at both the undergraduate and graduate levels, particularly in increasing the College's attractiveness to minority students;
  - Contributing to the State's initiatives in *Smart Growth*; and
  - Adding a further dimension to the College's focus on economic development that is sustainable.

and a copy of a multi-media presentation of ESF's recruiting effort.

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<sup>1</sup> Not for System approval.

**Addendum to the College of Environmental Science and Forestry  
Memorandum of Understanding**

**June 28, 2001**

**7.1 Mission Review Funding—Stipend Award**

Based on the merits of its competitively evaluated proposal, the College of Environmental Science and Forestry has received an additional \$120,000 Mission Review funding award to:

Enhance the quality and national reputation of its Environmental Chemistry and Environmental and Forest Biology doctoral programs at their interfacing areas of chemical ecology, including tightly related foci in molecular biology, biotechnology in forestry and biochemistry, by improving the competitiveness of its stipend awards. Specifically, the award is intended to provide additional funding—in the form of stipend toppers (supplementary awards) of \$2,000 to \$5,000 each—for a cohort of eight (8) to twelve (12) doctoral students.

As detailed in Appendix B, this award is contingent upon the College of Environmental Science and Forestry meeting reporting and other requirements. These reports will enable System Administration to better evaluate the strength and plausibility of future Mission Review funding proposals from the College.

*Appendix B***Mission Review Funding — Stipends**

Based on the merits of its competitively evaluated proposal, the College of Environmental Science and Forestry has received an additional \$120,000 Mission Review funding award to:

Enhance the quality and national reputation of its Environmental Chemistry and Environmental and Forest Biology doctoral programs at their interfacing areas of chemical ecology, including tightly related foci in molecular biology, biotechnology in forestry and biochemistry, by improving the competitiveness of its stipend awards. Specifically, the award is intended to provide additional funding—in the form of stipend toppers (supplementary awards) of \$2,000 to \$5,000 each—for a cohort of eight (8) to twelve (12) doctoral students.

This award will be made in three installments:

Year 1: \$40,000

Year 2: \$40,000

Year 3: \$40,000

First-year funding is contingent upon an agreed-upon Memorandum of Understanding. Second and third-year funding are contingent upon the reporting requirements detailed below.

*Reporting*

At the conclusion of the first year for which the College receives Mission Review funding, Environmental Science and Forestry will submit a report containing, as appropriate:

- a data section describing the profile of students who have applied, been accepted, and enrolled in the doctoral programs noted above, including appropriate comparison data from previous/other cohorts
- a narrative section describing how the funds improved the College's competitive position with respect to attracting the strongest possible pool of doctoral students into its these programs, including information on the impact of enhanced stipends on the yield of accepted students

At the conclusion of the second and third years of funding, the College will submit a brief report that describes the progress and academic achievements of this cohort of students, including engagement in research and scholarship with faculty. The report will also describe companion efforts to raise the national reputation of Environmental Chemistry and Environmental and Forest Biology at Environmental Science and Forestry and steps taken to secure ongoing enhanced stipend support for subsequent cohorts of students thereby demonstrating the sustainability of this effort.