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TO: M. Beverly Swan, Provost and Vice President
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FROM: Winifred Brownell, Dean of Arts and Sciences *Winifred Brownell*
Jeffrey Seemann, Dean of Environment and Life Sciences *MS*

DATE: January 22, 2004

SUBJECT: Progress Report on the Organization of Life Sciences at URI

Attached is an Interim Report from the Committee on the Organization of the Life Sciences at the University of Rhode Island. After receiving your request to form the committee, we met and readily agreed on the faculty members we would ask to serve. Fortunately, each colleague enthusiastically agreed to participate and the committee began its work, co-chaired by Jeff Seemann and Stan Cobb. As you will note from the attached report, the Committee has had many meetings, has collected data from a survey of the faculty members at URI engaged in the Life Sciences, has examined models from other institutions, and has prepared a presentation to inform colleagues in the Life Sciences of their progress and to involve them in discussions of values and proposals for organization.

At this point, the Committee is "committed to the concept of reorganization." Nine possible models were brainstormed that offer a range of opportunities and that propose to integrate the strengths of Life Sciences in different ways. These models have been incorporated in the presentation. During the next few weeks, the Committee plans to take the presentation to each department in the College of the Environment and Life Sciences and to the Department of Biological Sciences to highlight the progress of their deliberations and to engage faculty members in the process of developing and evaluating models for change. The Committee plans to gather more information about "the desired values and potential outcomes of a new departmental structure and to start to build support for change."

We appreciate the sense of urgency that the forthcoming bond issue generates. The open forums with departments will be completed by February. At that point, the Committee will review all of the data collected through the discussions, and develop a proposal for change. The proposal will be submitted simultaneously to the Curriculum Committees of Arts and Sciences and Environment and Life Sciences during the Spring 2004 semester. We would look forward to meeting with you, should you wish to discuss any aspect of the Interim Report or plans for future deliberations.

COMMITTEE ON THE ORGANIZATION OF THE LIFE SCIENCES
INTERIM REPORT
JANUARY 2004

On August 8, 2003, Deans Brownell and Seemann wrote to the faculty in the Department of Biological Sciences and in the College of Life and Environmental Sciences appointing a committee charged “to begin the process of identifying and implementing both a new organization for the life sciences in CELS and Biological Sciences, as well as a process that can achieve this goal.”

The committee (membership in Appendix 1) has been meeting on a nearly weekly basis since mid-September. Considerable progress has been made in gathering data, surveying faculty, outlining values and potential outcomes, and in drafting potential models. The committee has been desirous of keeping the process as open as possible, and has posted data, survey results and meeting reports on a readily accessible website (meeting reports in Appendix 2), and well as encouraging members to report back to their home departments. We have just finished planning for “taking the show on the road” to departments, requesting their input particularly with regard to values and outcomes. After this is complete we expect to hold a general meeting to discuss potential models and a possible process of implementation.

Accomplishments

A survey was distributed (via the web) to all members of the life sciences faculty. It asked for reactions to the potential reorganization of the life and environmental sciences at URI in several open-ended questions. Thirty-three responses were received. Results were varied, as might be expected. Benefits of reorganization were seen as:

- Increased uniformity in distribution of assets (courses, TAs, Experiment Station funds)
- Increased collaboration (in teaching and research)
- Increased funding for research
- Increased focus on Life Sciences at URI
- Shared interests w/in same department

Faculty also had concerns, and saw the following costs:

- Loss of resources (TAs, space, funding)
- My research or program won't fit into the new framework
- Too many faculty per department, incompatible people
- Increased advising, teaching
- Diminished scholarship, intellectual excellence, loss of CELS focus

The structure of the life sciences at several other universities, including all our neighboring state universities, was examined (appendix 3). One lesson that the committee could draw was that there are lots of models, even within this restricted sample. Three universities (Maine, UNH, UMass) have placed all life sciences within a natural

resources-like college, while three others (UVM, Delaware, UConn) have a “traditional” land grant distribution with life sciences in A&S and in Natural Resources and Agriculture. Some outliers also were found: Stanford, Harvard (the co-chairs’ alma maters) and SUNY Stony Brook have all of life sciences in the College of Arts and Sciences. Three of the state schools have interdepartmental biology majors, as does Harvard.

We examined our values regarding teaching research and outreach (see appendix 4). While agreeing with the list in the presidents’ memo (of July 8) on considerations about possible University-wide reorganization we added the following, among others:

- A fundamental mission is serving the liberal arts mission of URI
- Teaching and research are deeply intertwined and interdependent
- Fundamental science is important
- Basic research supports applied research; fundamental research underpins technology
- Must support high quality science
- Breadth and depth of the life sciences disciplines are important

Nine potential models of departmental organization of the life sciences were brainstormed but left in very rough form (see appendix 5). Most call for new departments and substantial redistribution of faculty. Of the 9, some were seen to be less likely to be accepted than others. The status quo model, and the “taxonomic” model are less likely. Most of the models include a Department of Cell and Molecular Biology. Many of the models have a department of Integrative Biology, or a Department of Ecology and Evolution

A presentation designed to inform departments of our progress and to involve faculty in the process of developing organizational models was developed recently (see Appendix 6). The purpose of this is to gather further information about the desired values and potential outcomes of a new departmental structure, and to start to build support for change. We will meet with all the Departments in CELS and Biological Sciences. The meetings will be completed in February.

The process for decision making envisioned by the committee is one of involvement of as many faculty members as possible through the meetings with departments, followed by consideration by the committee of the results of the meetings. The committee will use the results to refine the models. At a large meeting (all day retreat?) further input will be sought and a consensus on the best model will be sought.

Three potential (large-scale) outcomes of the process are possible.

1. Status quo – Bio Sci remains where it is, CELS is unchanged
2. Bring Bio Sci into CELS and reorganize at leisure
3. Reorganize CELS integrating Bio Sci faculty into the changed departmental structure

The Present Status:

- The committee is committed to the concept of reorganization
- The committee is taking the show on the road – to potentially affected departments - this month
- The committee is in agreement that the new building and the bond issue provide an impetus for keeping the deliberation process moving ahead expeditiously. It also is important that we proceed with as wide engagement of the potentially affected faculty as possible. We wish to ensure that the best possible model is selected and supported by the faculty.

Appendix 1

Committee Membership

Jeff Seemann Co-Chair

Stan Cobb Co-Chair

Emily Carrington

Marian Goldsmith

Marta Gomez-Chiarri

Scott McWilliams

David Nelson

Alison Roberts

Appendix 2

MEETING REPORTS

Report of the September 12, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, Scott McWilliams, David Nelson, and Alison Roberts.

Overview: There was general agreement among the committee on the following points. The committee has been charged as a coordinating group representing the faculty of CELS and the Department of Biological Sciences as a whole. We are investigating a reorganization of the Life Sciences through an open process that will actively engage faculty. This is an excellent opportunity to reorganize the Life Sciences in order to meet the changes in science, promote increased collaboration, and help to promote the development of Rhode Island's economy. There is an opportunity to set an example of how organizational change can drive excellence in teaching and research. This should attract new resources as well as create financial and administrative efficiencies for growing the Life Sciences at URI. Finally, this discussion will support the reorganization of the new Life Sciences Building (Center for Biotechnology, Biological Sciences Building).

Fundamental Goals for the Reorganization:

- 1) Be at the forefront of Life Sciences now and in the future, including the support of integrative, multidisciplinary, interdisciplinary and synergistic opportunities.
- 2) Excellence in education, research and outreach.

Baseline Information needed:

- 1) Identify which departments are involved in the Life Sciences at URI.
- 2) Identify the undergraduate and graduate programs that are involved in the Life Sciences at URI.
- 3) Develop a faculty survey that provides the committee with information about the concerns and hopes of the faculty for a reorganized Life Sciences at URI.

Possible foundations upon which to build different models for organization:

- 1) Sized-based (several similar sized? Or other arrangement?)
- 2) Undergraduate degree-based (status quo or alternatives)
- 3) Discipline/research-based
- 4) Combined teaching-research

Desiderata:

To coordinate curriculum between departments.

To maintain some level of individuality, attention and independence for each academic program.

To address existing frustration with other reorganizations that have failed in the past.

To enlist the support from the higher administration for the goals of the committee, and for a vital reorganized Life Sciences at URI

To do away with the notion of "basic" and "applied" science research.

To ensure that units stay the right size and don't get too big.
To ensure that undergraduate programs are accessible and contemporary

Tasks:

- 1) Edit and distribute minutes.
- 2) At the next meeting bring data on existing organizational structure, undergraduate majors, and graduate programs

It was agreed that the following information is needed for the next meeting:

Undergraduate Majors Information– JS/SC

Graduate Majors Information – SMW

Number of Students – JS/SC

Lists of Faculty – JS/SC

Faculty Opinions – Survey to be developed

- 3) Develop ideas for various models and discuss.

Future Meetings:

COLS meetings will be held each Thursday from 9:15 – 11 AM.

Agenda for next meeting:

Report and analyze gathered information so that development of models can be started.

Define a process that integrates the entire life sciences faculty into the process.

Report of the September 18, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, Scott McWilliams, and Alison Roberts. Not in attendance: David Nelson.

Discussion began around how the committee can add to the context and process of an overall University College-wide reorganization. It was agreed that focusing on reorganization of the Life Sciences would help to sharpen issues and prepare for other types of future reorganization. There was agreement that this committee will move forward with its original mission of developing and presenting potential models of reorganization of the life sciences.

The first point of discussion was how to engage the faculty in the process of developing possible models of reorganization. It was agreed that information will need to be distributed to and gathered from faculty to gain ideas, feedback and support. It was agreed that faculty would be approached on a departmental level as well as on a faculty-wide level. Additionally, members of the committee should be prepared to approach faculty members individually for a more complete assessment of opinion on some issues.

The following statements and questions were developed for an initial faculty survey on expectations and fears/concerns about a potential reorganization. This survey will be made available on the CELS website for anonymous responses, with a deadline of Wednesday September 24th.

“We are in the process of developing ideas for a reorganized Life Sciences at URI. Your input is critical for this process to be successful. As part of the initial brainstorming process, we would like your answers to the following questions. Your responses will remain anonymous. The results will be compiled and distributed to all faculty. We look forward to your continued input.

- 1) How might you potentially benefit by the reorganization of the Life Sciences? What are the best possible outcomes from your perspective?
- 2) What are you afraid of losing as a result of reorganization? Please tell us your primary concerns?
- 3) What types of departments could you envision being a part of?
- 4) What are your ideas for reorganizational models that we should consider for the Life Sciences at URI?”

Brainstorming: There followed a series of discussions on the following topics:

Organizational Models:

There are approximately 67 faculty members involved in life sciences in CELS and Biological Sciences. The committee felt that 15 additional faculty was a reasonable target for the future. The right size for departments is thought to be around twenty faculty members, based on the considerations below (Desiderata):

Desiderata:

Enough faculty to fulfill required teaching responsibilities/assignments (critical mass)
Coverage of key areas in Life Sciences for teaching and research
Depth in some disciplinary areas
Enough diversity to promote some interdisciplinary interactions
Critical interactions
Enough diversity to run a good colloquium
Rational allocation of resources (TA's, Experiment Station, etc)

Ideal number of life science Departments:

Somewhere between 3 and 6

COLS' first thoughts:

- Cell & Molecular Biology
- Comparative & Integrative Biology
- Ecology & Evolution

Results from CELS Department Heads Retreat:

Marine & Environmental Policy & Economics
Earth & Natural Resources Science
Cell & Molecular Biology
Ecology & Organismal Biology

Programs / Program Structure (graduate and other):

Marine, Biotechnology, Vector-borne diseases, Insects, Environmental Science, Neurobiology & Behavior, Cell & Molecular Biology, Ecology & Evolutionary Biology, Comparative Genomics, Animal Health & Well-being (USDA Program), Animal Genetics (USDA Program), Plant Genetics (USDA Program), Entomology & Nematology, Coastal & Aquatic Management

Undergraduate Majors:

One major with many tracks

Other Potential majors:

- Pre-professional
- Marine Science
- Wildlife & Conservation Biology
- Animal Science
- Cell & Molecular Biology
- Plant Science
- Biotechnology

Clinical Lab Sciences
Environmental Sciences & Management
Biology

Portals (Main Points of Entry into Life Sciences Programs):

Environmental Science
Marine Science
Biotechnology
Animal Science
Wildlife & Conservation

Undergraduate Focus Areas/Banner Programs:

Marine Science
Biotechnology
Environmental Science & Management
Animal Science
Health Science

Future Meetings:

Next COLS meeting will be held Thursday, September 25th from 9:15 – 11 AM.

Agenda for next meeting:

Report and analyze gathered information so that further expansion and development of models can be continued.

Report of the September 25, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, Scott McWilliams, and Alison Roberts. Not in attendance: David Nelson.

Discussion began by reviewing the responses of the “COLS Committee-Life Sciences at URI Survey.” There were 31 responses submitted and the group agreed that was an excellent outcome. There was a mixed tone of responses as some were strongly in favor of reorganization whereas some were strongly against it. The committee pointed out some noteworthy responses from the survey with the underlying theme of “figure out what is broken and see how reorganization can fix it.”

The next point of discussion was, “What is our role as a Land Grant University?” Historically the Land Grant was established in the 1800’s for agricultural research. CELS once was the College of Agriculture. It was brought up that the mission of the Land Grant was, and is, “to meet needs for society or a constituent group”. The University of Rhode Island no longer uses the Land Grant concept in the traditional sense of agricultural. It was suggested that the Land Grant mission be used for a seamless ability to do science across the spectrum while maintaining a strong connection between research and public feedback. The committee then agreed that the reorganization of CELS and the biology department should help in achieving this goal.

Points that were brought up as possible fears and problems include:

- When integration happens all units including the present Biology Department will be able to compete for Land Grant funds
- What will be the basis for the allocation of TA-ships?
- After reorganization will TA’s from the CELS departments be able to perform effectively in biology classes and vice versa?

Reorganization of the departments may set up optimum undergraduate and graduate programs that are more competitive and attractive. The question was then asked, “How do you decide the balance of each department?” The committee agreed that a department is a balance of faculty allied by common interests. Departments do not need to have identical missions. There is a need for diverse groups within departments. As the discussion continued some points that were brought up include:

- Do all departments need an undergraduate department to exist?
- Can each department have their own balance of teaching undergraduates/research/graduates?
- Some people within the department may have different priorities i.e. outreach, teaching, research, applied science

It was decided that to answer all of these questions all CELS and Biology faculty needed to be gathered in a workshop or retreat situation facilitated by a professional. The COLS committee decided that prior to such an event that they needed to gather data on how

departments and programs at other Land Grant Universities are organized, and then develop possible departmental models for a reorganized CELS.

Future Meetings:

Next COLS meeting will be held Thursday, October 2nd from 9:15-11:00 AM

Agenda For Next Meeting

Focus on preparation needed for a CELS and Biology faculty retreat.

Report of the October 2nd, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, Scott McWilliams, and Alison Roberts. Not in attendance: David Nelson.

Before discussion began the co-chairs Jeff Seemann and Stan Cobb announced their future absence from the upcoming meeting on Thursday, October 9th. They announced that Ann Morrissey, Director, Leadership Development Programs, will attend a future meeting to talk with the committee about group facilitation and strategic planning.

The meeting began with the review of two models or strawmen of possible major divisions and departments of CELS. The committee agreed to stay away from philosophical discourse during the meeting and concentrate on developing the models.

Three questions to think about while contemplating strawmen:

- What will structure look like?
- What will undergraduate majors organization look like?
- What will graduate programs organization look like?

It was noted that these two strawmen were developed with undergraduate programs as an underlying basis and that the major divisions in the second set of models have been encompassed by departments.

Discussion regarding the strawmen models of reorganization led to the agreement that the following points and questions must be taken into consideration:

- There is a need for a general biology major.
- It might be possible to combine similar existing majors and give them one general name.
- Teaching must match the theme of the department otherwise faculty members will start to feel disconnected and orphaned.
- To what extent should faculties be grouped together geographically (for example in the new building) according to their teaching or research interests?
- The committee agreed that being grouped together by research interests had more benefits.

-What will the logistics be around majors where two colleges get involved in organizing the requirements and curriculum (e. g., B.A. in Biology)? What if one college is more involved in that process than the other?

-What is the mission of the Dean's office for coordinating courses/programs/teaching?

- The Dean is responsible for making sure that the right faculty members are teaching the right classes. This is a sort of "protection from above" that may be able to balance out any imbalances within department.

-A rational basis is needed for TA allocation.

- Where there is a large population of students, there should be enough TA's to support it.
- TA's should be qualified for the class he/she is assisting. For example, Physiology should have a graduate TA doing research in physiology.
- There is a need for graduate students who are assigned TA's to be associated with strong research programs.

-Is it better for ownership of a program to be college-wide rather than department-wide?

- Can sharing go too far? For example: small departments always depending on faculty from other departments to fill in to teach "foundation courses".
- Should faculty be cross disciplinary?
- Will a cross-disciplinary faculty member be able to commit to the courses need for a willing, able, and qualified instructor?

The Following Tentative Models were suggested for presenting to the wider group:

1.) Departments:

Ecology and Organismic Biology (Ph. D/M.S)

Environmental Pathology
Marine and Freshwater Biology
Environmental Physiology

Earth and Natural Resources Science

Aquaculture Technology
Geology
Animal Science
Fisheries

Cellular and Molecular Biology

Microbiology
Biotechnology
Developmental Biology
Clinical Lab Science

Marine and Environmental Economics and Policy

2.) Graduate Programs:

Integrative Biology – Ph.D

Ecology and Organismic Biology
Earth and Natural Resources Science
Etc.

Cellular and Molecular Biology – Ph. D.

Environmental Science, Economics and Management – M.S.

Earth and Natural Resources Science
Marine and Environmental Policy

Ecology, Environmental, and Earth Sciences

Ecology and Organismic Biology
Earth and Natural Resources Science
Etc.

Future Meetings:

Next COLS meeting will be held Thursday, October 9th from 9:15-11:00am.

Agenda For Next Meeting:

COLS committee will think about further structural changes to “strawmen” models.
Develop more “strawman” models to compare with existing ones.

Report of the October 16, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, Scott McWilliams, Anne Morrissey, David Nelson, and Alison Roberts.

The meeting began reviewing and discussing the reorganization models previously developed. There was review of potential departments, undergraduate and, to some extent, graduate programs.

Model #1

Departments:	Ecological and Environmental Science	Integrative Biology
<u>Majors:</u>	Environmental Sciences and Management	Biological Sciences
	Wildlife Conservation	Animal Sciences
	Horticulture	Cellular and Molecular Biology
	Geology	Marine Biology?
	Aquaculture and Fisheries	
	Marine Biology?	

Model #2 – Departments by field

-Marine and Environmental Policy -Cellular and Molecular Biology
-Botany -Zoology -Microbiology -Biology

organization should introduce new faculty

(particularly) graduate programs should embrace the future of their discipline. While designing these programs the faculty should be asking the question “What are biology and life sciences going to be like in ten years?” By keeping this in mind, programs will be more attractive and competitive.

The point was made that undergraduate programs often find their homes in departments while graduate programs should be free to overlap or be multidepartmental. Also that being part of a departmental structure provides faculty members with a “home.” Faculty members’ preference of geographical location (specifically in a new building) may influence departmental structure.

Discussion then turned to the issue of redistributing current departments and majors without change, or reorganizing the current departments and majors under new headings. The point was then made that if current departments are changed and combined with others it is essential to reorganize and rename majors.

The question was then asked “What are we willing to prioritize in the reorganization process?”

-Departments

-Undergraduate Programs

-Graduate Programs

The group felt that the organization of undergraduate and graduate programs is of high priority, that faculty would probably like to be grouped geographically by research interest (shared equipment and techniques), and that departmental grouping and renaming would take a back seat until the undergraduate and graduate programs are decided.

Possible strategies for planning reorganization:

Outcome Planning/Scenario Planning

1. What do we want as an outcome? What values do we want the college to reflect? What are the trends and forces driving the future of science?
2. After outcomes are decided and agreed upon, we will then organize around them.
3. Apply outcomes to possible scenarios and have faculty analyze and refine.

Brainstorming: Potential outcomes of CELS reorganization

1. Educating and training students to a level where they will be prepared for a career in the field or advance on to graduate level programs.
(Background research needed for outcome: What jobs and graduate programs will these students embark on/enter)
2. Educating students to be leaders in their field.
3. Educating students on how science works. Training future researchers to be critical thinkers with a strong background in fundamental science.
4. Educating students for life experience.

The committee then asked the question, “When do we start to include the larger group into the reorganization process and what do we, as a committee, need to do to prepare for it?” It was decided that at a retreat, the first issue for the group as a whole should be to refine the outcomes mentioned above, then to present several basic models and open the floor to questions and comments. It was agreed that a power-point presentation should be formulated for the retreat.

Future Meetings:

Next COLS meeting will be held Thursday, October 23rd from 9:15-11:00am.

Agenda For Next Meeting:

Refine models developed at previous meetings and prepare them for presentation. See what is lost/gained from each model and if they satisfy the outcomes agreed upon. Work on preparing power point presentation for a retreat. Dean will share values and outcomes that the college administration wishes to achieve.

Report of the October 23, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Jeff Seemann, Stan Cobb (Co-Chairs), Emily Carrington, Marian Goldsmith, Scott McWilliams, David Nelson, and Alison Roberts.
Not in Attendance: Marta Gomez-Chiarri.

Meeting Agenda:

- 1.) Discussion of Underlying Values, Trends, and Desired Outcomes
- 2.) Discussion of Potential Models List
- 3.) Discussion of Interactions of COLS and Life Sciences Building Committee

Discussion began with the review of a letter from some A&S faculty members to the Faculty Senate Executive Committee (FSEC) in response to recent campus-wide reorganization efforts and planning. COLS committee members proceeded to outline the major themes of the letter. One being the concern for the loss of a liberal arts study curriculum. Another being that the effort for reorganization is a “mandate from above.” The committee considered these points and agreed that the reorganization of CELS and the Biology Department cannot be considered a closed process because the committee is composed of faculty members and all meeting minutes and resources are open to the public via the internet. However it was clear that the Provost has made her preference for reorganization known forcefully to the Biology Department.

Quick Review of Reorganization Planning Strategies

4. What do we want as an outcome? What values do we want the college to reflect? What are the trends and forces driving the future of science?
5. After outcomes are decided and agreed upon, we will then organize around them.
6. Apply outcomes to possible scenarios and have faculty analyze and refine.

Discussion of Underlying Values, Trends, and Desired Outcomes

Moving onto the first topic on the agenda, the question was asked, “What are our Underlying Values, Trends and Desired Outcomes?” The committee came up with the following responses:

Over all Institution Excellence

A.) Education Component

- undergraduate
- graduate

B.) Research Component

- graduate

C.) Outreach Component

D.) Organizational Functioning Component

- administration
- program delivery
- faculty excellence

OUTCOMES

1. Educating to a higher level
2. Producing leaders in field
3. Educating in basic science
4. Critical thinking skills
5. Increased institutional support
6. Educating people for life
7. Serve as economic engine for state
8. Research excellence
9. Outreach community
 - skill and knowledge transfer to constituents other than students
10. Streamlined administrative structure
 - e.g. program delivery
11. Expand number of life science faculty

VALUES

- Obligation to provide service course to other colleges (more like outcome)
- Obligation to provide high quality education to undergraduates and graduates (more like outcome)
- Teaching \leftrightarrow Research
 - intertwined, integral, interdependent down to individual faculty level
- Broadly educated citizenry
- Fundamental science is important (both teaching and research)

- Breadth and depth of life sciences discipline important
molecules⇒ecosystems
- Breadth and depth of education and research essential
- Basic⇒applied
fundamental research underpins technology
- Knowledge for knowledge sake
- High quality science A⇒Z
- Fundamental mission is serving liberal arts mission of URI
(values from President's Memo)
- General education is fundamental to a sound curriculum
- Honors Program is of significant value to the institution as a whole
- Liberal arts education is central to the essence of a university
- University has an obligation to be an economic engine for the State

After compiling and revising lists of Values, Trends and Outcomes, the following statement was agreed upon:

“A unified faculty that can agree on a plan for reorganization is a very strong force. It is possible to make demands upon the administration and see results when a unified force is at work, for example establishing new faculty positions.”

Discussion of Potential Models List

Before reviewing previously developed potential reorganization models, the committee looked over other New England and Eastern U.S. Land Grant University's Life Sciences and Biology Department structure (Lists of Land Grant Universities and their department structure is available in the resources section of the COLS website). The following points and conclusions were made:

- There are many different models of departments and majors
- Biology departments may be in in Arts and Sciences UCONN, UVM, SUNY Stony Brook, Delaware or in Agriculture and Nat.. Res. (UMASS, Maine, and UNH)
- A few of the schools have large interdisciplinary undergraduate majors that are administered by several departments
- There is a wide range of possible reorganization models that stay within the parameters of URI's sister schools

The following Models were then revised and developed:

Model #6

Marine + Environment + P + E
Earth + Natural Resource Science
Ecology + Environmental
Integrative Biology
CMB

Model #7 – Building Model/Architectural Standpoint

Molecular Bio Sciences/20 faculty
Marine Biology and Marine Sciences/20faculty
Organismal Biology/20 faculty
M + E + P + E
Earth and Natural Resource Sciences

Model #8

M + E + P + E
CMB (Marta, Mather, Bradley)
Integrative Biology (Entomologists, Animal)
NRS + Earth
Environmental Science (Entomologists, Plant)

Model #9

M + E + P + E
CMB
NRS
Plant and Animal Sciences
Geosciences
Integrative Biology

Discussion of Interactions of COLS and Life Sciences Building Committee

There is an overlap of discussion topics between the COLS committee and the Life Sciences Building Committee. Some members of COLS are on the building committee. There was agreement that the two committees should interact and discuss possible building plans.

Future Meetings:

Next COLS meeting will be held Thursday, October 30th from 9:15-11:00am.

Agenda For Next Meeting:

Refine models developed at previous meetings and prepare them for presentation starting with model #2.

Report of the October 30, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Stan Cobb (Co-Chair), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, David Nelson, and Alison Roberts. Not in attendance: Jeff Seemann (Co-Chair) and Scott McWilliams.

Meeting Agenda:

1. Review and revise outcomes, values, and models from previous meeting.
2. Discuss rational basis for TA allocation.

Discussion began about the models developed in the previous meeting. The committee then agreed that for the models to be accepted by the rest of the faculty, they should be configured around a rational basis for TA allocation. Conversation completely turned to developing a rational basis for TA allocation. Currently the basis for TA distribution is by how many courses are taught by each faculty member and need for assistance for those courses (distribution in proportion to classes taught). However this distribution basis is influenced by each department's historical evolution. The committee then asked the question "Do we have enough TA positions right now?" The general feeling amongst the committee members was that there is a shortage. It was agreed that this problem in the past has been fixed by providing overtime to existing TA's instead of hiring more. It was then brought up that if there is going to be an increase in enrollment there should be an increase in TA positions. The committee then agreed to list values and outcomes associated with potential models taking TA distribution into account.

TA Distribution Values

- Provide experience to future scientist
- Provide valuable teaching skills
- Relieves faculty of staffing class laboratories
- TA's should have appropriate background for courses they teach
- Any biology TA should be able to teach introductory labs
- TAships have two roles
 - o Support student
 - o Support curriculum
- Number of TAships available should reflect actual need
- TA assignments should allow long term planning (curricular and research)
- TA's are evaluated annually

- TA support should guarantee stability pending performance
 - o MS 2 year
 - o Phd 4 year
- TA allocation should promote research excellence
- TA allocation allows recruitment of “best” students for each graduate program
- Teaching requirements will not drive graduate programs and admissions

TA Distribution Outcomes

- Need more TA’s in enrollment increase
- Tie to increase in enrollment in life sciences courses

Models for Reorganization: taking TA allocation into account

- 1.) All assigned to dean’s office for whimsical distribution
- 2.) Assigned to Department proportional to teaching effort
- 3.) Allocated to departments based on teaching requirements
- 4.) Based on graduate students in graduate program
- 5.) Proportional to external research assistantship funding (provost’s plan)
- 6.) Equal distribution of TAships to faculty in all departments
- 7.) Assigned to interdepartmental graduate programs
 - a. Equally?
 - b. Or proportional to number of faculty?
 - c. Proportional to teaching effort?

Future Meetings:

Next COLS meeting will be held Thursday, November 6th from 9:15-11:00am.

Agenda For Next Meeting:

Refine and combine models for presentation to faculty at retreat.

Report of the November 13, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Stan Cobb (Co-Chair), Jeff Seemann (Co-Chair), Emily Carrington, Marian Goldsmith, Marta Gomez-Chiarri, David Nelson, Scott McWilliams and Alison Roberts. Also in attendance: Ann Morrissey.

Meeting Agenda:

3. Identify timeline, audience, process and presentation for gaining faculty support.
4. Clarify upcoming meeting schedule.

Discussion began on identifying a timeline, audience, process and presentation for moving COLS work into larger groups of faculty/departments. After general discussion of presenting to the faculty as a whole, it was agreed that the best strategy is to present, to each department separately, conceptual questions of where the departments have come from and where they would like to be in the future. This will help smaller groups understand the work the committee has completed, to ascertain what they would like for their own department and to provide the committee feedback for improving and shaping their eight possible models. Once these department meetings have been complete then a meeting with all faculty would be scheduled.

The two-step process will first engage faculty into the problem-solving process and then gain their feedback on improvements. The committee believed that first the faculty must agree that there is a need for change, and then the models should be presented. It was agreed that the committee would go in pairs to department meetings with a standard template of speaking points and questions. From this meeting they would bring feedback to the committee. McWilliams and Cobb agreed to create a list of questions for the faculty meetings.

Morrissey asked how the committee would address questions of University-wide reorganization. After some discussion it was agreed that the committee has no direct influence on this so they will remain focused on the reorganization of the Life Sciences. Seemann added that the Provost continues to encourage COLS to not let the possible University-wide reorganization affect their work.

Gomez-Chiarri suggested that momentum be created within the faculty for support of reorganization within the Life Sciences at the department meetings. Outcomes, values and a preamble/introduction need to be presented. The following questions need to be asked: What would faculty like to maintain in terms of partnerships, organization, etc? What would faculty like to gain?

It was agreed that at the department meetings the following will happen:

- 1) Preamble/introduction, big picture
- 2) Values to promote
- 3) Outcomes we would like to see

- 4) Review Models
- 5) Ask for comments, feedback, pro & cons, additions, deletions, rank in order of importance - on both an individual and a departmental basis.

Morrissey encouraged the committee to go to the individual departments first and then go to the faculty as a whole. She suggested at the departmental meetings to bring the standardized template of questions and integrate their feedback into the proposed models. She suggested committee members engage faculty in conceptual questions that will stimulate conversations about values and the future direction of the life sciences at URI. She agreed that when it comes to presenting the possible models, that a model of no change be presented too.

Carrington brought up the issue of TA ships and that issues of risk need to be address and defused to gain faculty support of reorganization. Nelson followed-up with the topic of resources. He explored ideas of how COLS must prove to faculty that the reorganization does not mean reduction of faculty, departments and funds. Gomez-Chiarri suggested that COLS present a picture of unification attracting more resources, to combine common teaching and research tools, thereby giving the Dean more bargaining power for future resources.

Action Items:

McWilliams and Cobb agreed to develop an initial plan and to create a list of questions for the departmental faculty meetings.

Next Meeting:

Thursday, December 11th at 9:15 AM

Meeting days for the spring semester will be dependant on changes in teaching schedules.

Agenda For Next Meeting:

1. Finalize planning for meeting with departments.
2. Graduate programs – values, outcomes

Report of the December 11, 2003 Meeting of the Committee on the Organization of Life Sciences (COLS):

Committee Members in Attendance: Stan Cobb (Co-Chair) Marta Gomez-Chiarri, Marian Goldsmith, Scott McWilliams, and David Nelson. Not in Attendance: Emily Carrington, Alison Roberts, and Jeff Seeman.

Due to other engagements, Jeff Seeman could only attend for the first few minutes. He began the meeting by reassuring the committee members that despite his absence the effort to reorganize is still a top priority of his. He then made the point that his absence maybe beneficial to the committee members giving them more freedom to develop their mission without the distractions of administration.

Stan Cobb and Scott McWilliams presented a rough draft of the PowerPoint presentation to be given to the CELS and Biology departments. The committee then reviewed the revised the rough draft. Discussion centered on potential changes to be made. Mainly working on ways for each slide to be clearer and more concise. The committee members asked several questions concerning the meaning and message projected in each slide. The goals of the committee were revisited several times throughout the discussion. It was determined which points should be in the presentation and which should be included in the facilitator's notes. The committee attempted to predict any questions or reactions the audience may have to the presentation. After much brainstorming and agreement on changes to be made, it was decided that a revised presentation and rough draft of the facilitator's notes would be developed for the next COLS meeting.

Finally the decision was made that early in the spring semester the committee would give a mock run of the PowerPoint presentation. Soon after the committee will start lining up departmental presentations.

Future Meetings:

Next COLS meeting will be held Monday, January 12th from 9:00-11:00am.

Agenda For Next Meeting:

Review revised PowerPoint presentation and rough draft of facilitator's notes.

Appendix 3

LIFE SCIENCES AT NORTHEAST STATE SCHOOLS

As COLS deliberated the organization of the life science majors at URI, we thought it would be useful to have information about how some of our sister universities organized their life and environmental sciences.

Here is a sampling of the organization of life science departments and undergraduate majors at nine other universities. All our sister New England land grant universities are surveyed, and I added in Delaware and SUNY Stony Brook to give a broader comparison. To get even broader, I threw in Stanford and Harvard at the end.

The main take-home message is that even within this small sample there are many different organizational plans. Some schools restrict majors to very few, and some ensure that the name of the major matches the name of the department. Other schools have a bewildering array of majors, often several per department. At least five schools have interdepartmental (a few have intercollege) majors. A third of the schools have interdepartmental biology majors, including UVM and UNH.

Note that this is limited to undergraduate majors and programs. The graduate programs are much more diverse at most schools. Another survey later on will address this.

Stan Cobb

UMASS Amherst
Undergraduate Majors in *italics*

COLLEGE OF NATURAL SCIENCES AND MATHEMATICS

Pre-Dental Studies (? No department listed)

Pre-Medical Studies (? Ditto)

Biology Department

Biology

Biochemistry & Molecular Biology Department

Biochemistry & Molecular Biology

COLLEGE OF NATURAL RESOURCES AND THE ENVIRONMENT

Natural Resources Conservation Department

Wildlife & Fisheries Conservation

Resource Economics Department

Resource Economics

Plant & Soil Sciences Department

Plant & Soil Sciences

Natural Resources Conservation Department

Natural Resource Studies

Forestry

Building Materials & Wood Technology

Microbiology Department

Microbiology

Geosciences Department

Geography

Geology

Earth Systems

Food Science Department

Food Science

Veterinary & Animal Sciences Department

Equine Industries

Animal Science and Pre-Veterinary

Environmental Sciences

Environmental Sciences

STOCKBRIDGE SCHOOL

Turfgrass Management

Nb There is a Nutrition Department in the School of Public Health and Health Sciences.

University of Maine

Undergraduate Majors in *italics*

Hard to find the specific departments for the majors!

COLLEGE OF NATURAL SCIENCES, FORESTRY AND AGRICULTURE

Department of Biochemistry, Microbiology and Molecular Biology

Biochemistry,
Microbiology,
Molecular and Cellular Biology

School of Marine Sciences

Aquaculture
Marine Science

Department of Biological Sciences

Biology
Botany
Zoology

Department of ????

Clinical Laboratory Science

Department of Plant, Soil and Environmental Sciences

Department of Resource Economics and Policy

Resource and Agribusiness Management
Environmental Management and Policy

Department of Food Science and Human Nutrition

Human Nutrition
Food Science

Department of Forest Ecosystem Science

Forest Ecosystem Science

Department of Wildlife Ecology

Wildlife Ecology

Other Majors (gave up on finding Departments)

Forestry
Geological Sciences
Landscape Horticulture
Parks, recreation, and Tourism
Resource and Agribusiness Management
Sustainable Agriculture
Wood Science and Technology

INTERDISCIPLINARY

Ecology and Environmental Sciences
Forest Operations Science

University of Vermont

Undergraduate Majors in *italics*

COLLEGE OF AGRICULTURE AND LIFE SCIENCES

Animal Science

Animal Science (with several concentrations)

Botany and Agricultural Biochemistry

Botany (with several concentrations)

Microbiology and Molecular Genetics

Microbiology

Molecular Genetics

Nutrition and Food Sciences

Nutrition and Food Sciences

Dietetics

Plant and Soil Sciences

Plant and Soil Science

Sustainable Landscape Horticulture

COLLEGE OF ARTS AND SCIENCES

Department of Biology

Biology

Zoology

Environmental Science (joint with Geology)

Department of Geology

Geology

SCHOOL OF NATURAL RESOURCES

Forestry

Natural Resources

Recreation Management

Wildlife and Fisheries Biology

INTERDISCIPLINARY (CROSS-COLLEGE)

Environmental Studies

Biochemistry

Biological Sciences

Environmental Sciences

University of New Hampshire
Undergraduate majors in *italics*

COLLEGE OF LIFE SCIENCES AND AGRICULTURE

Department of Animal and Nutritional Sciences

Animal Sciences

Dairy Management

Nutritional Sciences

Department of Biochemistry and Molecular Biology

Biochemistry

Department of Microbiology

Microbiology

Department of Natural Resources

Forestry

Water Resources Management

Soil Science

Wildlife Management

Environmental Conservation

Department of Plant Biology

Plant Biology

Environmental Horticulture

Department of Resource Economics and Development

Community Development

Environmental and Resource Economics

Tourism

Department of Zoology

Zoology

INTERDEPARTMENTAL

General Biology

Ecology, Evolution and Behavior

Marine and Freshwater Biology

Molecular, Cellular and Developmental Biology

University of Delaware
Undergraduate Majors in *italics*

College of Agriculture and Natural Resources

Department of Animal and Food Sciences

Animal Science

Food Science

Department of Bioresources Engineering

Bioresources Engineering Technology

Engineering Technology

Department of Entomology and Wildlife Ecology

Entomology

Plant Protection

Natural Resource Management

Wildlife Conservation

Department of Food and Resource Economics

Agricultural Economics

Resource Economics

Agricultural and Technology Education

Food and Agribusiness Management

Food Marketing

Natural Resource Management

Department of Plant and Soil Sciences

Environmental Soil Science

Landscape Horticulture

Plant Biology

Plant Protection

College of Arts and Sciences

Biological Sciences

Ecology and Organismic Biology

Cellular and Molecular Biology and Genetics

Biotechnology

Chemistry and Biochemistry

Biochemistry

Several chemistry degrees

Geology

Geology

Earth Science Education

University of Connecticut
Undergraduate Majors in *italics*

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

Department of Agricultural and Resource Economics

Resource Economics

Department of Animal Science

Animal Science

Environmental Science (joint with Liberal Arts and Sciences)

Department of Natural Resource Management and Engineering

Natural Resources

Department of Nutrition Science

Nutritional Sciences

Department of Pathobiology

Pathobiology

Department of Plant Science

Plant Sciences

COLLEGE OF LIBERAL ARTS AND SCIENCES

Department of Ecology and Evolutionary Biology (25 faculty)

Biological Sciences (joint)

Ecology and Evolutionary Biology

Environmental Science (joint)

Department of Geology and Geophysics

Geology and Geophysics

Department of Marine Science

Coastal Studies

Department of Molecular and Cell Biology (28 faculty)

Biological Sciences (joint)

Molecular and Cell Biology

Department of Physiology and Neurobiology (14 faculty)

Biological Sciences (joint)

Physiology and Neurobiology

INTERDEPARTMENTAL:

Biological Sciences

INTERDEPARTMENTAL, INTERCOLLEGE

Environmental Sciences

Biodiversity and Conservation Biology

SUNY Stony Brook
Undergraduate majors in *italics*

COLLEGE OF ARTS AND SCIENCES

Department of Biochemistry and Cell Biology

Biochemistry

Biology Undergraduate Program

Biology

General Biology

Bioengineering

Developmental Genetics

Ecology & Evolution

Environmental Biology

Marine Biology

Neuroscience

Ecology and Evolution Graduate Program

Neurobiology and Behavior Graduate Program

SCHOOL OF HEALTH TECHNOLOGY AND MANAGEMENT

Clinical Laboratory Science

... and 8 others

INTERDISCIPLINARY based in School of Marine Sciences

Environmental Studies

Stanford University
Undergraduate Majors in *italics*

SCHOOL OF EARTH SCIENCES

Department of Geology and Environmental Science

Geology and Environmental Science

Department of Geophysics

Geophysics

Department of Petroleum Engineering

Petroleum Engineering

Program in Earth Systems

Earth Systems

SCHOOL OF HUMANITIES AND SCIENCES

Department of Biological Sciences

Biological Sciences

Harvard University
Undergraduate Majors in *italics*

COLLEGE OF ARTS AND SCIENCES

Department of Molecular and Cellular Biology (MCB)

Biology

Biochemical Sciences

Department of Organismal and Evolutionary Biology (OEB)

Biology

Department of Earth and Planetary Sciences

Earth and Planetary Sciences

INTERDEPARTMENTAL

Biology

Environmental Science and Public Policy (intercollege)

Appendix 4

VALUES AND OUTCOMES

COLS: List of Components, Outcomes, Values and New Models
Meeting of 10/23/03

Over all Institution Excellence

B.) Education Component

- undergraduate
- graduate

B.) Research Component

- graduate

E.) Outreach Component

F.) Organizational Functioning Component

- administration
- program delivery
- faculty excellence

OUTCOMES

1. Educating to a higher level
2. Producing leaders in field
3. Educating in basic science
4. Critical thinking skills
5. Increased institutional support
6. Educating people for life
7. Serve as economic engine for state
8. Research excellence
9. Outreach community
 - skill and knowledge transfer to constituents other than students
10. Streamlined administrative structure
 - e.g. program delivery
11. Expand number of life science faculty

VALUES

- Obligation to provide service course to other colleges (more like outcome)
- Obligation to provide high quality education to undergraduates and graduates (more like outcome)
- Teaching \leftrightarrow Research
intertwined, integral, interdependent down to individual faculty level
- Broadly educated citizenry
- Fundamental science is important (both teaching and research)
- Breadth and depth of life sciences discipline important
molecules \Rightarrow ecosystems
- Breadth and depth of education and research essential
- Basic \Rightarrow applied
fundamental research underpins technology
- Knowledge for knowledge sake
- High quality science A \Rightarrow Z
- Fundamental mission is serving liberal arts mission of URI
(values from President's Memo)
- General education is fundamental to a sound curriculum
- Honors Program is of significant value to the institution as a whole
- Liberal arts education is central to the essence of a university
- University has an obligation to be an economic engine for the State

Appendix 5

POTENTIAL DRAFT MODELS

List of Reorganization Models **Result of Committee Brainstorming**

Null Model: Status Quo

Biological Sciences remains in A&S, no change in departmental structure in CELS

Model 1: Simple transfer

Department of Biological Sciences joins CELS to create a 10 department college. No further organizational change envisioned.

Model 2: Transitional

Department of Biological Sciences joins CELS to temporarily create 10 department colleges. Further organizational change then occurs.

Model 3: Aggregate present departments

One college, four departments:

Department of Marine and Environmental Policy and Economics

Department of Earth and Natural Resource Sciences

Department of Ecology and Organismal Biology

Department of Cell and Molecular Biology

This and all the following would have a more cross-cutting graduate program organization (e.g. Integrative Biology, Genomics, Environmental Science, Economics and Management, Ecology, Environmental and Earth Sciences)

Model 4: Levels of Organization

One college, four departments:

Department of Marine and Environmental Policy and Economics

Department of Ecology and Environmental Science

Department of Integrative Biology

Department of Cell and Molecular Biology

Model 5: Taxonomic

One college, five departments:

Department of Biochemistry

Department of Zoology

Department of Botany

Department of Microbiology

Department of Marine and Environmental Policy and Economics

Model 6:

Marine and Environmental Policy and Economics
Earth and Natural Resource Science
Ecology and Environmental Biology
Integrative Biology
Cellular and Molecular Biology

Model 7: – Easy on the Architects

Marine and Environmental Policy and Economics
Molecular Bio Sciences
Marine Biology and Marine Sciences
Organismal Biology
Earth and Natural Resource Sciences

Model 8:

Marine and Environmental Policy and Economics
Cellular and Molecular Biology (with some from other departments)
Integrative Biology (with some from several departments)
NRS and earth sciences
Environmental Science (with some from other departments)

Model 9:

Marine and Environmental Policy and Economics
Cellular and Molecular Biology
NRS
Plant and Animal Sciences
Geosciences
Integrative Biology

Appendix 6

POWERPOINT PRESENTATION TO DEPARTMENTS



Committee on the Organization of the Life Sciences

Website: <http://www.uri.edu/cels/cols.html>

Members:

Emily Carrington	Scott McWilliams
Marta Gomez-Chiarri	David Nelson
Stan Cobb	Alison Roberts
Marian Goldsmith	Jeff Seemann

TODAY...

1. What the committee has been doing
 - Minutes of our meetings are on CELS website
 - An overview of our work so far
2. Feedback from you on future directions
 - You are a fundamental part of this process
 - We need your input



Impetus for Reorganization

- ◆ Life and Environmental Sciences have changed dramatically
- ◆ Resources are limited – how to compete?
- ◆ Other Universities are changing – how to compete?
- ◆ Make the state more excited about Life & Environmental Sciences at URI

Elsewhere ...

- ◆ 9 Universities surveyed (UNH, UVM, UME, UCONN, UMASS, SUNYSB, Delaware, Stanford, Harvard)
- ◆ Many organizational models!
- ◆ Undergraduate majors: some have many, others have few, many tracks
- ◆ Some have cross-departmental biology major



The Survey Asked...

- ◆ From **YOUR** Point of View:
 - Benefits?
 - Costs?
 - Department you would like to be a part of?
 - Possible models?
- ◆ Responses to survey
 - 33 responses so far
 - After reviewing the main results, we will ask you for further feedback about costs and benefits

The Survey Results ...

- ◆ **Benefits of reorganization (in order):**
 - More uniform distribution of assets (courses, TAs, Experiment Station funds)
 - Increase collaboration (in teaching and research)
 - Improve funding for research
 - Increase focus on Life Sciences at URI
 - Shared interests w/in same department



The Survey Results...

- ◆ Costs of reorganization (in order):
 - Lose resources (TAs, space, funding)
 - My research or program won't fit into the new framework
 - Too many faculty per department, incompatible people
 - Increased advising, teaching
 - Diminished scholarship, intellectual excellence, loss of CELS focus

The Survey ...

- ◆ Your feedback: Are there additional
 - Costs?
 - Benefits?



Brainstorming ...

- ◆ How could changing the way we are organized improve your undergraduate curriculum?

Brainstorming ...

- ◆ How could changing the way we are organized improve your research?



Brainstorming ...

- ◆ What would the ideal department look like?
 - Ideal department size?
 - Ideal mix of interests?
 - Importance of proximity to collaboration?