



September 13, 2007

TO: Joseph A. Alutto
Interim Executive Vice President and Provost

Robert T. McGrath
Senior Vice President for Research

FROM: President's and Provost's Advisory Committee (PPAC)

This document contains the PPAC's first year review of the Targeted Investments in Excellence (TIEs). A few words of overview are appropriate to put the individual reviews in perspective.

The first issue involves the timing of the review. The PPAC actually received the memo (dated June 22) requesting the review and setting out the guidelines for it on July 13. It has taken about two months to develop the protocol within the PPAC for the review and then to carry out the review. Unfortunately these were the two months when faculty were literally spread around the world, making this a most challenging endeavor. Assuming that these reviews will be on-going it is certainly the recommendation of the PPAC that the time window be switched.

Appendix I summarizes the process by which this review was conducted. As indicated therein, reviews of the individual TIEs were conducted by unique, 3-person panels. It therefore follows that there are some variations in the nature/scope of the reviews that are dependent upon both the nature of the initiative and the persons comprising the panels. Such variations are typical for reviews of most projects/proposals funded by Federal agencies. However the review of the individual reports by the PPAC as a whole offered an opportunity for additional information, cross-checks, and controls not normally present in the Federal process. Some significant revisions arose from this latter stage and are reflected in the final reviews. An opportunity for dissent was also offered; however, you will note that no dissents were filed.

A final word should be included about conflict of interest, which is clearly a matter of concern with any internal review process. As a fundamental precaution, no member of any TIE was included in the 3-person panel that reviewed that TIE. The PPAC raised the conflict of interest issue with Provost Snyder before reviewing the initial TIE proposals. Her response was that she was comfortable with the arrangement and believed that all the reviews would be in the "best interest of the University". In carrying out the reviews, the PPAC has done its best to conform to that spirit.

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Emeritus Members:

Bunny Clark
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Mat. Sci. & Engineering

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Climate, Water and Carbon Initiative

Summary of funding awarded.

The OAA allocation memo, 29 June 2006, offered \$11,350 K in cash and \$510 K in continuing funds for each Fiscal Year 2007-2011, amounting in total to \$13,900 K overall. Additionally another \$2 M in cash was held subject to the Senior Vice President for Research agreeing to a plan jointly conceived by the Climate-Water-Carbon and Clean-Sustainable-Energy TIEs (which would involve the Colleges of MAPS, FAES, SBS, Engineering; the Byrd Polar Research Center; and the John Glenn Institute). A five-year plan was due in November 2006 or with the first year report.

As per your memo of June 22 2007, we are pleased to have an opportunity to evaluate progress, opportunities, and challenges under the TIE Climate, Water, and Carbon Initiative (CWC). This review is based upon the Original Proposal, Award Letter. Implementation Plan, OAA Response to the Implementation Plan, and CWC's Year-One Annual Report dated May 31 2007.

We fully understand that Year One is in fact only a partial year in that funds were not allocated and the Implementation Plan was not approved until January 2007. Nevertheless, we have chosen to respond to the *Year One Annual Report* as though CWC had been in operation for the full academic year. This is not to be overly critical but, rather, to highlight some issues that might provide useful guidance as CWC moves forward. We would, of course, anticipate that the issues we raise, and others, be addressed in Year Two and reflected in the *Year Two Annual Report*. Our responses also draw heavily on the **Implementation Plan**.

Your memo suggested four criteria -- Are the accomplishments adequate and is there an appropriate trajectory for success? Are there significant threats to success? If so, what might those be? Are there opportunities to enhance success? If so, what might those be? Are there concerns regarding the projected allocation of funds for the next academic year? While these have guided our deliberations, and can be readily answered through our responses, the report is organized by particular topics and/or areas of concern.

Organization

The Climate, Water and Carbon TIE initiative involves five parties: Byrd Polar Research Center; College of Mathematical and Physical Sciences (MAPS, School of Earth Sciences); the John Glenn School of Public Policy and Management; College of Social and Behavioral Sciences (SBS, Department of Geography); and the College of Food, Agriculture, and Environmental Sciences (CFAES, School of Environment and Natural Resources (SENR)). CWC is governed by 12 Advisory Board members. This is comprised of one Department Chair (Geography); two School Directors (Earth Sciences, Environment and Natural Resources); the Director of John Glenn; two faculty members each from CFAES, Earth Sciences (one also affiliated with Byrd), and Geography (both also affiliated with Byrd); one faculty from John Glenn, and the CWC Director (currently also Director of Byrd). Among many other responsibilities, the Advisory Board reviews the goals of the TIE, evaluates CWC's progress toward these goals, and oversees

fiscal management.

Research-Related Activities:

The *Year One Annual Report* (dated May 31 2007) indicates a good beginning to CWC's projects. There has been a good deal of activity under the Central Africa (Kilimanjaro) and Peru (Andes) modules. A large number of publications/professional presentations also are shown, some of which relate to the Kilimanjaro/Andes efforts and others by members of the CWC group. Several external grants and two proposals under review are reported.

These are primarily ongoing projects in the sense that members of the CWC group have been involved in them for some time. But, while distinct activities are reported for the Kilimanjaro-Andes efforts, this generally is not the case for other ongoing projects such as Sugar Creek Water Management in Ohio; collaboration between OSU and EARTH universities in Costa Rica; Sub-Saharan Africa; Himalayan region including India; and Iceland. In that most of the external grants have 2006 start dates, one can expect that activity is underway. Nevertheless, except for the signing of an MOU between major Icelandic Universities and OSU, that nothing is said about progress on other ongoing projects is a concern to this committee.

For example, the *Implementation Plan* (pp. 18-19) states that the Year 1 activities of the Ohio River Basin project (Sugar Creek among other sites) would consist of a series of OSU internal workshops. Workshops are listed in the *Year One Annual Report*, but not what was derived from them in terms of moving ahead towards project goals. By contrast, the Kilimanjaro (pp. 13-17) and Peruvian (pp. 20-22) projects are addressed in terms of specific accomplishments.

A related question concerns research grants. The *Implementation Plan* sets out the goal to Expand the Funding Base (p. 10). While several ongoing grants and pending proposals are indicated in the Year 1 Annual Report, to what degree have/do these (and future grants/proposals) "expand the funding base" as opposed to constituting "business as usual"? We suggest that some kind of metric be established to compare future and past years.

There also is an organizational issue concerning research activities, which consists of two separate team efforts. Team 1 is comprised of an alliance between SBS and MAPS through Byrd; Team 2 is separately managed by CFAES; and there are distinct differences in the focus and approach of each. Team 1's focus is on climate and water with targeted scientific questions. Team 2's focus is on carbon nutrients and water recycling in managed ecosystems, but also includes topics such as technology development for reducing greenhouse gas emissions, adaptive strategies to efficiently implement land-based carbon sequestration, secondary environmental impact assessment, restoration and enhancement of soil and water quality, and implications for public policy and international cooperation. In short, the research structure of Team 1 more effectively resembles that found in a usual research proposal submitted to government agencies, whereas Team 2 is guided by a College Steering Committee with the key role of determining funding priorities in terms of topics and levels.

Accordingly, integrating the efforts of these teams would seem to involve more than the usual task of merging different, but complementary, bodies of knowledge. They also would need to

overcome differences in research structure, approach, focus, and style. In that the teams are strongly identified with distinct colleges, institutional differences also might intervene. Having noted this, however, there is evidence that the teams have moved closer together than would be the case without TIE. The common link with Iceland and its universities is one example. We look forward to seeing many other examples in the Year Two Annual Report.

Seed Grant Program

The Seed Grant Program is an important component that builds on Research Related Activities and has the potential to broaden the CWC community. In this regard, we are pleased to find that a Seed Grant Program, described as only in its planning phase in the *Year One Annual Report*, has now been initiated (June 13, 2007). The Call for Proposals states that \$160,000 is allocated to this effort, and that up to five proposals will be funded. We have heard concern among members of the CWC community that the amount allocated to seed grants is insufficient, but we are not in a position to comment on the issue at this time.

Given our earlier observations on the research structure of CWC, we are concerned about the breadth of the Seed Grant program. In the Call for Proposals, carbon is mentioned; it said that “at least one funded proposal will deal with the Ohio River Basin activities/issues; and that the review team will represent the full breadth of the CWC initiative. But the program is identified on Byrd’s web page as “MAPS CWC Seed Grants” and it is being administered through Byrd. This suggests a more narrow focus than that of the entire TIE, and we question the wisdom of such fragmentation. Wouldn’t a broader program that represented all elements of CWC be both more effective in achieving its goals and more consistent with the spirit with which OAA established the TIE initiative?

Community Building

We understand that a goal of the TIE program is to expand and broaden various communities around particular scientific foci. In this regard, it is relevant to ask to what degree has the CWC initiative been effective in building a widespread, multi-disciplinary community of interest in order to realize the related synergies. The Seed Grant Program is an important tool in this endeavor, but as just noted, we have reservations about its structure and the degree to which it will incorporate “others”.

Similarly, the *Implementation Plan* sets out the goal of hiring several new faculty (p. 9). Thus far, according to the *Year One Annual Report*; one new faculty (with an expertise in Climate Modeling) was hired by Geography, and one research scientist (with expertise in climate/oceanic/global hydrologic modeling) was hired by Byrd Polar. This creates a synergy that likely would not have occurred without TIE. Regarding other faculty hires, there is no report of searches underway, but we presume there will be more hires in the future.

Broad Questions Driving the CWC Initiative

The *Implementation Plan* (pp. 6-7) sets out three broad questions of concern, but there is no mention of these in the *Year One Annual Report* –

1. *Does human intervention have the potential to push the climate system such that abrupt changes become more frequent, intense and rapid?;*
2. *Do we have enough surface water to maintain society, i.e., what is the spatial and temporal variability in terrestrial surface water storage and how can we predict these variations more accurately?*
3. *How are major and minor element cycles being disrupted by anthropogenic activities, especially the consumption of fossil fuels, and what are these effects on climate, water quality, and ecosystem health?*

How do accomplishments thus far and plans for the coming year address these broad questions? Or alternatively, as the research has progressed, has there been a change to the set of Broad Questions?

Social Science Dimension

Of the three broad questions set out by the Implementation Plan (pp. 6-7), two have distinct human dimensions -- 1. *Does human intervention have the potential to push the climate system such that abrupt changes become more frequent, intense and rapid?;* and 3. *How are major and minor element cycles being disrupted by anthropogenic activities, especially the consumption of fossil fuels, and what are these effects on climate, water quality, and ecosystem health?*

It is well known that humans impact climate-water-carbon, as well as the opposite, but it is unclear how this important set of interrelationships is being addressed by the CWC TIE. Our concern is heightened by noting that the Seed Grant Call says “Researchers must work within a team of which at least one member is a MAPS faculty”. “Working in a team” is definitely within the spirit of TIE. But we wonder about the focus on MAPS given that this TIE initiative is joint between CFAES, MAPS, and SBS. In this regard, SBS is certainly a source of social scientists, but within the CWC frame, so are CFAES and Glenn. Indeed, we know of at least one such proposal from a CFAES unit.

Governance

The *Year 1 Annual Report* and *Implementation Plan* both refer to a Pattern of Administration that “provides a framework for how the CWC Initiative will be conducted.” Under this, governance is by an **Advisory Board**, (p. 4, *Implementation Plan*), but this seems to be defined more in an “administrative role” than a “scientific team” role (p. 3, *Implementation Plan*). While the Advisory Board includes several of the CWC’s central scientists (as noted above), its role is “to meet at least annually with the initiating deans, ... review the goals of TIE annually, ...advise the director on policy matters, ... “establish a panel to evaluate proposals, ... [and] organize an annual meeting of CWC members” – basically a set of functions which are some distance from the day-to-day implementation of the CWC science.

Given the size, scope, complexity, and organizational intricacies of the CWC TIE, it would seem useful to also have a **Science Advisory Board**, with the charge of bringing greater direction and definition to the scientific mission overall. Just as individual initiatives have periodic meetings of

their research team, we envision that the **Science Board** would meet regularly (e.g., once per month), map out what has been done and what the next steps are, draw together various pieces of the overall effort, coordinate activities, explore complementarities and new directions that arise from them, and, in general, better interweave the two major research communities that comprise the CWC TIE.

Some specific suggestions for the long-term planning that a Science Advisory Board might undertake, in addition to research issues themselves, include (i) set out a broad high-quality seminar program to uniformly energize and inform; (ii) interrelate and integrate research goals of the various research teams; (iii) consider cross-college/department undergraduate and/or graduate courses, workshops, and the like; (iv) organize larger state, national and international meetings that bring focus and attention to CWC efforts; (v) create and guide multi-college planning teams for large grants; (vi) narrate multi-college recruiting of scholars who span disciplines, postdocs who are poised to do so, and graduate and undergraduate students who dream of the possibility. The general point here is move towards greater breadth, depth, and integration within the CWC program.

Integration of Ideas and Tasks

Reading the *Year One Annual Report* and Implementation Plan, one gets the impression that integrating all that is going on, such that $2+2=5$, will be/is a major task. Having a Science Board should assist this (significantly?), but more effort will be required.

As an example, consider the *Implementation Plan*. This states that “CWC will initially involve two teams -- One focusing specifically on issues of ice dynamics and related water resources [I/W], and a second focusing on issues of carbon sequestration and cycling [CS]” (p. 11). How do the accomplishments articulated in the *Year One Annual Report* relate to the focus of these two teams? How will/do these two teams interact?? As the CWC project unfolds has there been any alteration to this plan? This matter also was touched on above, under Research-Related Activities.

It appears from the *Implementation Plan* (pp. 13-17, 20- 22) that Team One focusing on Ice/Water (I/W) will carry out research in the Kilimanjaro and Peruvian Andes regions. These are described in the Year 1 Annual Report. Concerning Team Two, the Implementation Plan (pp 18-19, 23-25) identifies hypotheses, interventions, and sites for implementation – the Ohio River Basin, Costa Rica (EARTH University), and Iceland. While the Plan also says that “projects are in place”, the *Year One Annual Report* says little, if anything, about them, results, progress, etc – not to mention how the activities of Teams One and Two integrate with and complement one another.

One hindrance to integration appears to be the distinct focus of the I/W (Team 1) group and breadth of the CS (Team 2) group. Would it be advantageous if Team 2 focused more directly on carbon alone? Another suggestion towards integration is to carry out more activities in common such as joint proposals, symposia, workshops, student advising, and the like. Heightening interaction/integration also would be enhanced by having a common research site where climate, water, carbon could all be studied jointly. We have heard that Iceland has received attention as

possibly providing such a venue, but there is no mention of this in the various CWC reports.

Also regarding CWC's integration, we anticipate that the seed grant program, research projects, and other efforts will be developed in a coordinated manner such that the end product would be a major block grant(s) proposal (e.g., a CWC Center) for submission to major funding agencies. This is an important expectation of TIE, but in CWC's Year One Annual Report there is no mention of specific plans (or even thoughts) related to themes, funding agencies, lead and participating faculty, budgets, etc with regard to developing a block grant proposal(s). We understand it is early in the process, and assume that the goal will be given attention in the future.

Integration between TIEs also is relevant. In particular, we understand that monies have been set aside for developing synergetic activities in the general energy and environmental areas. In this vein, a dialogue between CWC and the Engineering Energy TIE could prove fruitful. Thinking of biofuels as a common theme, for example, one might ask How does the use of biofuels impact the climate, water, carbon or life cycle of energy and environmental systems?

Proposed Activities

The Implementation Plan proposes five activities for FY07 –

1. Identify external funding opportunities and submit proposals
2. Hire support staff and risk analysis/decision scientist (50% TIE / 50% TIU)
3. Organize college or university-wide competition for seed funds (to be held annually)
4. Identify research priorities and allocate funding for projects with emphasis on Ohio River Basin, Costa Rica, and Iceland
5. Organize and implement international conference on land restoration and climate change in Iceland.

From the discussion in this memo, it is evident that some of the tasks were addressed, others not.

This is not surprising, of course. In the future, however, it would seem useful for the *Science Advisory Committee*, and/or the *Administrative Advisory Committee*, to highlight what has been accomplished under each task, redefine tasks to be accomplished in the coming year, etc. This would provide inventory-taking, a guide to activities, and a history of progress under the TIE.

Progress

Throughout this report the most common theme, probably, is **Integrating Ideas, Tasks, Working Groups**, etc. While this need stands out in the case of CWC, it is likely to be a common need among TIEs in general. In this regard, we have the impression that, while there remains a great deal to do, more has been accomplished than is evident from the written materials. To the degree our impression is true, CWC is to be applauded. But progress towards synergistic integration remains a high priority issue, and we strongly suggest that the Year Two Annual Report give particular attention to this matter.

Again, we fully understand that TIE is in the earliest phase, and that addressing issues such as those raised above is pre-mature in many cases. Nevertheless, we raise them here to provide direction going into Year Two and to provide a sense of the type of matters that a PPAC review is likely to be concerned with.

Mathematical Biosciences Institute

Summary of funding awarded: This TIE was awarded central funds totaling \$1,490,000 in cash and \$725,000 in continuing funds for a 5-year period beginning July 2007. Two colleges are also making substantial commitments of continuing funds towards the initiative: \$145,000 and \$580,000 for CBS and MAPS, respectively. The colleges' commitments of cash are \$230,000 from CBS plus \$200,000 for renovations and \$290,000 from MAPS plus \$220,000 for renovations.

Summary of implementation plan: According to the Implementation Plan submitted Nov 1, 2006, hiring faculty is a major component of this TIE proposal and in Y1, it was proposed that an Associate Professor be supported by these funds (Kubatko-Salter). Program support funds were also allocated for Y1. From the implementation plan submitted in Nov, it was difficult to clearly discern the allocation by the College, and the Vice Provost asked that this be clarified in the annual report submitted May 2007. He also asked that the "plan should include the names of the primary faculty investigators for the initiative", which was absent from the implementation plan.

a. Are the accomplishments adequate and is there an appropriate trajectory for success?

The 2-page report submitted in May 2007 contains an overview of accomplishments:

- Hired two new faculty, one appeared to be hired prior to the start of the funding. The original plan is to hire 7 new faculty members over 3 years. Also recruited a senior MBI long term visitor. Hence, the faculty recruitment aspect of program implementation appears to be on track.
- Submitted an NSF grant proposal on Undergraduate Biology and Mathematics (\$1M).
- Granted 10 courses release time for 2006-07. Granted another 19 for 2007-08. The original plan calls for 20 courses release time. Hence, this aspect of implementation is on track.
- Piloted three new undergraduate courses in 2006-07. Will pilot one more undergraduate course in 2007-08.
- Carried out a variety of programming activities proposed to start in Y1 (e.g., interdisciplinary workshops). For example, aside from the MBI's scheduled workshops on Systems Physiology, interdisciplinary workshops were hosted on diverse topics such as:
 - New Approaches to Modeling Sleep/Wake Dynamics and Cognitive Performance (Partially supported by the AFOSR),
 - Opportunities in Mathematical Biology for Under-represented groups,
 - MicroRNA in Development and Cancer (partially supported by the College of Medicine),
 - Chemogenomics (partially supported by the College of Medicine), and
 - Education/Curriculum ("Over the Fence: Mathematicians and Biologists Talk About Bridging the Curricular Divide")
 - Erich Grotewold (CBS, Dept of Plant Cellular and Molecular Biology) has just been awarded a \$2.5 million grant and will use funds from this award to conduct a workshop hosted at the MBI in 2009.

- Former MBI postdoc Gheorghe Craciun (Wisconsin-Madison, Dept of Mathematics and Dept of Biomolecular Chemistry) has a grant proposal pending, part of which would fund hosting a Focused Research Group at the MBI.

The strength of the Mathematical Biosciences TIE Program continues to be the exciting potential of such endeavors. The progress in the first year was strong based on the accomplishments outlined above and the updated information provided by Dr. Avner Friedman on the self-proposed metrics for measuring success of the Program (see summary of this in table below).

b. Are there significant threats to success? If so, what might those be? The two items requested by the vice provost in his response to the implementation plan were not included in the May report as requested. It is essential that a clear plan and commitment of college funds be outlined for the next 4 years. In addition, a comprehensive list of faculty members that are part of this TIE should be provided.

The founding director of MBI, Dr. Avner Friedman, has done an outstanding job in positioning the MB Program to become a top tier program. He received the NSF grant that is the foundation of the MB Program and this was successfully renewed through 2010. This program is still in its tender young age (as suggested by the lack of data indicating successful research and training grants). The ability to attract a new Director with leadership capabilities to have the MBI compete successfully for renewal in 2010, move the MBI to the next level as an institute, and help OSU to move to the elite level of Math/Bioscience institutions is critical to future success. Avner is presently scheduled to step down as MBI Director on August 31, 2008. A search committee has been formed and is currently interviewing candidates.

c. Are there opportunities to enhance success? If so, what might those be? It is essential that the college uphold its commitment of matching funds for faculty hiring and other activities.

There are ongoing preparations for an NIH proposal involving Friedman, Aguda and MBI postdocs with Clay Marsh's group in the Pulmonary and Critical Care Unit (Dept of Internal Medicine) of the OSU College of Medicine.

d. Are there concerns regarding the projected allocation of funds for the next academic year? As mentioned above, there are still questions concerning allocation and use of central vs. college funds that need to be clarified. In addition, the lack of data or progress in nine of the 10 self-proposed metrics for measuring programmatic success is of concern. Some measures of accountability to ascertain that next year will bring about the promised progress are welcome.

Self-proposed metrics for assessment of progress	Data provided
1. Renewal of MBI in 2007	The MBI was renewed by the NSF at a 25% increase in funds through Sept 2010.
2. Progress within the OSU community in preparing other initiatives for funding the MBI beyond 2012	MBI is currently working with the MAPS development officer, and development is one of the primary charges of the still-forming MBI Board of Trustees. We also anticipate working with the CBS development officer as well.
3. Acquisition of undergraduate, graduate and/or postdoctoral training grants in mathematical bioscience within the next three years	None reported (1 NSF grant submitted, see below)
4. Development and implementation of undergraduate and graduate curriculum development projects within the next two years	-Piloted 3 new undergrad courses, a fourth course is planned for Spring 2008 - Two separate grad courses were offered in math, one on mathematical neuroscience, and one a course run by faculty and MBI postdocs exposing grads to research problems in mathematical bioscience
5. Implementation of a mathematical biology minor within the next two years	Goals over the next few years (in CBS, MAPS, and together) include completing the approval process for new undergraduate major/minor by 2009 and completing the approval process for new graduate specialization by 2010. For example, work has started in the math dept on such a minor, at the level of informal discussion of what courses are needed, identification of faculty involved, and official department interest/blessing via its Undergraduate Committee.
6. Increased funding in mathematical biosciences, compared to the baseline funding now in place within MAPS and CBS, as measured by OSURF Sponsor Totals	The NSF increased its MBI budget by 25% in the successful renewal.
7. An increase in the number of publications in the research area of mathematical biosciences from OSU faculty and postdoctoral fellows, compared to the baseline publication rates now in place within MAPS and CBS	It is difficult to compare increases at this point, but research activity/publications by MBI postdocs, and visitors (including OSU faculty granted release time to interact with MBI) have been substantial, including two books (one in final drafts by Friedman and Aguda, to be published by Oxford University Press; one to be published by postdoc Jianjun Paul Tian in the Springer Lecture Notes Series).
8. An increase in the number of graduate applications to the programs in mathematical biosciences	There is no formal program yet, but the number of courses and the number of enrolled students are increasing.
9. Quality of post-OSU placement of our students and postdocs in research universities and institutions	Premature to say at this point in the initiative.
10. Increased enrollment in courses identified as involving mathematical biosciences content	The three undergraduate pilots mentioned in Item 4 above had approximate enrollment totals of 170 in Au'06, 170 in Wi'07, and 80 in Sp'07. The grad courses had a combined 20-25 students.

Public Health Preparedness for Infectious Diseases

Summary of funding awarded: This TIE was awarded central funds of \$3,331,112 in cash and \$1,457,835 in continuing funds for a 5-year period beginning July 2007. The award letter dated June 29, 2006 lists the five-year college commitments in continuing funds as \$3,630,055 from the College of Medicine; \$750,000 from the College of Veterinary Medicine; and \$250,000 from the School of Public Health. In addition, the five-year cash commitments are: \$1,890,000 from the College of Veterinary Medicine; \$1,086,000 from the College of Medicine; and \$355,112 from the School of Public Health. The Implementation Plan dated November 27, 2006 lists continuing funds and cash commitments respectively of \$199,497 and \$1,014,669 from the College of Biological Sciences; \$440,133 and \$768,250 from the College of Food, Agriculture and Environmental Sciences; \$733,095 and \$11,546,614 from the College of Medicine; \$180,000 and \$460,000 from the College of Pharmacy; \$231,191 and \$440,000 from the School of Public Health; and \$754,118 and \$1,908,823 from the College of Veterinary Medicine.

Summary of implementation plan: According to the Implementation Plan submitted on Nov 27, 2006, the first two years will be devoted to selection of a Steering Committee and the hiring of a coordinator. The Steering Committee will inform and advise the college leadership and will meet once each month. The coordinator will provide support to the Steering Committee and facilitate faculty recruitment, graduate, and pilot research programs. The bulk of the implementation plan includes faculty recruitments, graduate research assistance program, and a pilot research program.

The strength of the Public Preparedness Program for Emerging Infectious Disease Threats: From Discovery to Application continues to be the exciting potential of cultivating new interdisciplinary research, training and service efforts that were previously non-existing at OSU. This set of scholars has outlined a good, focused program with very competent participants. This program is timely and holds great promise.

a. Are the accomplishments adequate and is there an appropriate trajectory for success?

The progress in the first year was excellent and sets the path and pace for achieving future success (see table below). The steering committee has done an outstanding job in getting the agreements among the six colleges on faculty hires, which constitute the major component of the program costs (52%). It appears that the plans for distributing pilot grants and graduate fellowship are also in place. Significant uplift is expected for the coming year. However more detail concerning the credentials of the coordinator and perhaps some job descriptions and search committee compositions for the hires would have been helpful for the evaluation.

b. Are there significant threats to success? If so, what might those be?

The necessary elements of success appear to be in place, with no significant threats.

c. Are there opportunities to enhance success? If so, what might those be?

Maintaining the excellent momentum in the program by the steering committee, to ascertain the hiring of faculty members and to promote the interaction among the new hires and existing faculty members, is likely to bring exciting measurable outcomes such as increases in grant funding and high quality research funding.

d. Are there concerns regarding the projected allocation of funds for the next academic year?

No concerns have been identified. However again perhaps more details concerning exactly how much of the first year allotment has been committed and plans for the remaining dollars would have been helpful.

Appendix: Progress to date

	Accomplishments
1. Promotes interdisciplinary interactions	<ol style="list-style-type: none"> 1. Formed a steering committee with representatives from each of 6 participating colleges 2. Developed mission statements 3. Hired a program manager 4. Identified about 100 faculty members that will be invited to join the program 5. Developed a fact sheet for media relations.
2. Distribute pilot research grants, to promote research leading to funding	A selection committee will be finalized in June, 2007. First two awards will be given in Fall 2007
3. Partnering in new faculty hire	<ol style="list-style-type: none"> 1. Reached agreements on details of partnership-hires, including % cost allocation to each of the 6 colleges 2. Identified a total of 12 positions, all except one are co-sponsored by partners 3. Three positions in active recruitment; search committees established in 3 additional, to-be advertised positions 4. Hired 8 faculty members with research interests in PHPID (3 are co-sponsored by partners)
4. Establish competitive graduate student training and fellowship programs	A selection committee will be finalized in June, 2007. First two scholarships will be awarded in FY08.
5. Publications in best journals, citations	No data
6. Increase of service/presence in national and international panels on PHPID-related subjects	No data
7. Translating PHPID research to benefit public health, food safety, and training of public health preparedness	No data
8. Technology development, entrepreneurship	No data

Center for Cosmology and Astro-Particle Physics (CCAPP)

Summary of funding awarded: This TIE was awarded central funds totaling \$4,780,000 in cash and \$282,000 in continuing funds for a 5-year period beginning July 2007. The College of the Mathematical and Physical Sciences is also making a commitment of continuing funds towards the initiative: \$500,000, respectively.

Initiative Scope and Goals:

The scope of the CCAP is to advance research about "the nature and evolution of the Universe, as well as the physics of black holes and the highest energy cosmic particles." The overarching goal is the creation of a "world-leading" interdisciplinary research center in these areas, which will be a "destination location" for students and senior scholars world-wide. Specific aspects of the strategy to accomplish this goal include:

- i) Initiation of a highly visible Workshop program
- ii) Initiation of a highly visible postdoctoral program
- iii) Increased external funding of research program

Progress:

There has been substantial activity in CCAPP thus far including the following:

1. Three high caliber postdocs have been hired, two have arrived.
2. Two investments in multi-university team projects:
 - Seed funding for ARIANNA (no details on amount) and \$0.5 million to join the Dark Energy Survey
 - Initiated project on the Large Binocular Telescope (already in pipeline?)
3. Two workshops and a collaboration meeting hosted. Third workshop for postdocs and graduate students planned for autumn.
4. Visitor program commenced; one visitor hosted, two planned for autumn
5. Matching funds have been provided for OSMOS. Grant was awarded. The money invested in Dark Energy Survey is expected to improve competitiveness for grants.

Review:

Responses to specific OAA questions:

a) *Are the accomplishments adequate and is there a trajectory for success?*

There has been substantial activity in the CCAPP thus far. It is judged that this is indeed a good start for success. There has been excellent progress in getting the infrastructure organized and the workshop/visitor/post-doc programs operating. The R. Jack and Forest Lynn Biard Lectureship

in Cosmology and Astrophysics has been endowed and the first lecture scheduled for October 17, 2007.

b) *Are there significant threats to success?*

There are no obvious problems with CCAPP. While CCAPP should be applauded for investing some of its resources in seed funding, it is important that this seed new areas of activity, not just provide more funds for business as usual.

c) *Are there opportunities to enhance success?*

One can always encourage continued activity seeking outside funding.

d) *Are there concerns about the projected allocation of funds for the next academic year?*

No

Summary:

The initiative seems very much on course for the first year. It will take some time to judge how successful they will be at achieving their goal of a "world-leading" interdisciplinary research center.

Clean and Sustainable Energy

Summary of funding awarded

The OAA allocation memo, 29 June 2006, offered over five years \$1,273 K in cash and \$704.5 K in continuing funds, amounting in total to \$4,795.5 overall. Additionally another \$2 M in cash was held subject to the Senior Vice President for Research agreeing to a plan jointly conceived by MAPS, FAES, SBS, and Byrd Polar & John Glenn Institutes to aid activities supporting this program and one on Climate, Water and Carbon. Upon receipt of a rational first year implementation, those funds would be released. A five-year plan was due in November 2006 or with the first year report.

Summary of Implementation Plan

In late November an undated, unnumbered and anonymous implementation plan appeared. The totals, divided between COE contributions and those from MEC, CBE, MSE and some unspecified department would appear to be \$2,092 K in cash and \$4,374.5 K in annual rate, amounting to some \$6,466 K, a sum greater than the Provost's contribution. Unfortunately no prose explains whether this includes much of additional \$2 M in cash offered by the Provost to be shared between it and Climate, Water and Carbon effort. In any case the College and its relevant departments appear ready to fully bear their share of the costs. Whether an equivalent intellectual commitment will be made remains to be seen.

The delay in the implementation plan is particularly confusing since not only did OAA supply nearly all that was requested, but the bulk of the funds requested is for new faculty -- to fill in vacancies that had developed when federal expenditures for alternate energy sources dwindled and nearly stopped.

Introduction

As a result the College got off to a slow start having made only one offer to a theorist from a good place with few publications. Theory is fine, but in the end what will matter is things that work. The principal task that has *not* been taken -- let us hope it doesn't have to wait for a permanent director -- is to bind the effort into a cohesive, synergistic whole. It easy to imagine that solar energy and nuclear energy have nothing to learn from each other -- given the history -- but a broad university is the best place to hunt, using the enthusiasm of students thrown together in seminars, retreats and all sorts of conscious raising exercises. The four OAA questions are approached in turn. The report ends with a table laying each year's task, followed when available with what was done and what was achieved. Time will tell whether the table fills in nicely or not.

The Questions: Our Best Guesses

A. Do current accomplishments pave the way for success?

The introduction has already stressed the unnecessary slow start. The center has no visibility: no web site, only one dully written ad for jobs, one committee doing nearly every function. The acting director needs to energize the process; finding his permanent replacement could spark the process. Still any candidate needs to see that something is happening.

B. What might block future progress?

The continuing balkanization of the College continues to hinder active collaboration between the departments. If only the dramatic improvement in the first-year program could nourish the rest of the educational program. Here the Dean's leadership is essential. Since the central administration chose not to rebase the Engineering College budget when budget restructuring started, a proper rebasing this time could energize the whole college faculty. The committee stresses again that the Center needs to be more active and energetic about creating a forum in which the community can interact, identify problems and solutions and reach decisions. This must be pursued urgently to ensure that they get on track for accomplishing their goals in a timely way.

Energy is so central to engineering that anyone in the faculty might be a source of good candidates for the positions. An active director should reach out for good suggestions. The quality of the new appointments could be decisive for the Center's success.

C. What unanticipated opportunities might enhance success?

The first annual report comments on the shallowness of the pool of the candidates and the number of competitive searches nationally. But nowhere is any comment about the international pool. We are not alone. Indeed this committee thinks the commitment to clean, sustainable energy is stronger abroad than in the US. An enhanced search -- using the college faculty broadly -- might find excellent candidates who might welcome the chance to make their mark here.

D. Are next year's projected funds sufficient for the desired progress?

The report makes no substantial complaint about the Center's funding. If it should turn out the startup funds may be a little tight, I trust the Center will clearly explain the situation to the university administration and the State. Surely both recognize that that Ohio showing the way in clean, sustainable energy could reposition the image of the State in the Nation.

On balance the committee is positive provided the Center and the College revs its activity without burning out any faculty.

Appendix: Progress so far: a continuing table.

Partial Task Table for Clean Sustainable Energy

Acronyms: NP=nuclear program, R=reactions (clean combustion), SM=sustainable mobility and/or bldg (?-- meaning unclear in year 1 report)

FC=fuel cell. Only the immediate future is indicated.

Year	Hirings	Goals	Achievements	Startup Costs (est).
06-07	N/A	(a) Five Search Comm apptd.; 5 jobs defined; 5 ads published and mailed to targeted inst. (b) Apply for large group grants. (c) Team building: seminars, retreats, webpage, etc.	(a) one college-wide comm. apptd for search, benchmarking peer inst., setting focus areas, and organizing seminars. Success: identified 33 candidates of unspecified quality, made one offer. (b) 12 fac. applied for NSF ERC.	
07-08	NP director NP jun.fac. R jun.fac. SM sen.fac. add.jun.fac.	(a) 5 active searches with 25 cand's visit. (d) 3 search comm. apptd. 3 job defined; 3 ads published & mailed to targeted inst.		\$755 K
08-09	add. jun.fac. add. sen.fac.(dir?)			\$1155 K
09-10	FC jun.fac. SM jun.fac.			
10-11	Add. jun. unspecified fac.			

Advanced Materials Initiative

Summary of Funding:

The original TIE request was for approximately \$17M, while the final award was for \$9M in cash, \$624K in continuing funds for a period of 5 years and another \$2M to stimulate activities further activities associated with the IMR. The award letter also specified 5 year Engineering and MAPS commitments of \$2.25M and \$1.1M as continuing funds and \$3.8M and \$5.3M in cash, but lower levels appeared in the implementation plan and the Provost requested that these be reconciled in the 2007 annual report.

Initiative Scope and Goals:

The objective of the Advanced Materials Initiative is to catalyze the development of OSU's materials research efforts. The first objective is the establishment of an overarching interdisciplinary Institute for Materials Research (IMR). The TIE support for the IMR was to consist of challenge grants, support for technical staff, and technical training, backed up by college support for a director and staff, lab space and a shared faculty position in ECE/MSE. The second objective is to develop a series of thrusts in particular areas. The first thrust is the Center for Electronic/Magnetic Nanoscale Composite Multifunctional Materials (ENCOMM) with the TIE supporting equipment purchases and the colleges supporting 1 faculty hire in Physics and 2 postdoctoral positions and administrative and infrastructure support. The second thrust is the Multi-Scale Computational Simulation and Design of Materials (MCSDM) effort to be supported by two new faculty, a research scientist and the purchase of a specialized spectrometer. The third thrust is the Polymer Nanomaterials and Nanobiotechnology effort to be supported by seed grants, graduate and undergraduate fellowships and support for postdoctoral positions.

Progress:

The initiative has made considerable progress in its first year. The IMR has been established with a director and staff. A joint faculty search between ECE and MSE in electronic materials is proceeding with broad participation from both groups, as well as a position focusing on photovoltaic materials that will be an excellent link with the Energy TIE. They are also working on hiring 3-4 technical staff. Three seed grant/matching fund programs have been established: Interdisciplinary Materials Research grants (expecting 9 for up to \$45K each) to support a post-doc in an interdisciplinary project, IMR Facility Grants (16 for up to \$2.5K for minor charges) and IMR Industrial Challenge Grants (matching funds of up to \$25K/year). The equipment purchases were prioritized and the first items have begun to arrive. This has been limited first by a delay in the availability in the funds and then by caps on the rate at which the equipment can be purchased. The first major grant proposals attempting to leverage the TIE support are underway. There is a regular schedule of meetings/colloquia for the consortium.

Review:

Responses to specific OAA questions:

a) *Are the accomplishments adequate and is there a trajectory for success?*

Yes. The faculty hiring plans and the block grant proposals look particularly good.

b) *Are there significant threats to success?*

A major objective of the TIE is to obtain materials processing/research equipment. The primary threat to the success of the TIE at present is the fiscal restriction on front-loading these equipment purchases.

c) *Are there opportunities to enhance success?*

The one objective of the TIE proposal that receives little attention in the first year report is that of supporting junior researchers.

d) *Are there concerns about the projected allocation of funds for the next academic year?*

For financial planning purposes it would be interesting to see the projected future budgets and the impact of rising equipment maintenance costs on these budgets as more equipment is procured. Comments by PPAC members of the Advanced Materials Initiative indicate that ENCOMM has established facility usage fees that will pay maintenance contracts and enable upkeep management. The five year budget includes MAPS support for facility management; beyond five years, continuing funds from the TIE (via ENCOMM and IMR) will support facility technical staff with maintenance responsibilities. OAA asked that the annual report include a reconciliation of the College commitments in the award letter and the implementation plan be included in the annual report, but this was not done.

Summary:

This TIE is on track. The coming year will provide the first tests of its (external) success through the outcomes in hiring faculty and pursuing major external funding sources. Future reports should include summaries of the new research and funding opportunities the TIE has enabled, as compared to the continuation of pre-existing activities.

Population and Health Initiative

Summary of funding awarded: This TIE was awarded central funds totaling \$2,189,000 in cash and \$224,165 in continuing funds for a 5-year period beginning July 2007. Upon receipt of a rational first year implementation plan, those funds would be released. Two colleges are also making substantial commitments of continuing funds towards the initiative: \$1,259,694 from SBS; \$130,000 from Human Ecology; \$96,000 from Nursing; and \$83,000 from Public Health, respectively. The colleges commitments of cash are \$1,814,000 from SBS; \$20,000 each from Human Ecology and Nursing; and \$50,000 from Public Health. A five-year plan was due in November 2006 or with the first year report.

Overall, there has been a considerable amount of activity and documentable progress reported for this first year of TIE finding of the Population and Health Initiative. Some of these activities were initiated prior to the TIE program, but there is no doubt that progress has been accelerated by the investment of College and OAA funds.

The investments in faculty, administrative staff, and research funding reported for the first year are consistent with the Implementation plan submitted by SBS in response to the TIE award. We comment below on what we see as the most significant accomplishments and indicators of progress thus far, followed by our assessment of opportunities (and concerns) for the future.

Accomplishments to Date

(1) Faculty hires. The P & H departments have already had remarkable success in recruiting and hiring new faculty who bring added strength and breadth of expertise to the Population and Health concentration. Seven relevant hires have been made in the “core” departments of Economics, Political Science, Psychology, and Sociology, and additional positions are being advertised in these and related departments. The new hires include Casterline (Sociology) and Blau (Economics) -- both first-rate, world-scholars. As these new faculty come on board in their respective departments, the important question will be how quickly and how well they become incorporated in interdisciplinary projects and work groups associated with the P & H initiative.

(2) Research activities and support. Consistent with the initial proposal and implementation plan, the P & H initiative quickly established a coordinating committee with primary responsibility for implementing a seed grant competition. After an open call for proposals and a committee review process, seven projects were awarded grants totaling \$400,000 from TIE funds (along with some partnering college cost sharing). A decision was made to selectively award grants of some significant amounts, rather than “spread thin” the funding in small allocations, and we believe this is the best strategy for leveraging seed monies to enhance potential for development of externally funded projects down the road. The projects funded reflect the broad scope of the P & H initiative. They come from diverse disciplines and the majority have multiple co-investigators from different disciplines (and even the two Psychology-based projects involve PIs with significant collaborations with research units in the College of Medicine). It is

too soon to evaluate the ultimate value of these funded projects, singly or collectively, but we urge the P & H coordinating committee to establish mechanisms for monitoring and evaluating the outcomes and products of the projects funded under the seed grant program.

The (now) successful hiring of a grants manager, to be housed in the Initiative in Population Research (IPR) center, will add significantly to the administrative support available to P & H faculty and research projects and proposals.

Although IPR was established (with support from NIH population center funds) prior to the TIE program, the existence of this center greatly facilitates the goals of the P & H initiative and will play a significant role in its future success. IPR is very vibrant -- as the Year One Report says it carries on a “seminar and workshop series” (at a frequency of approximately every-other week throughout the year), has an ongoing seed grant program of its own, and several active “working groups”. According to the Year One Report, its associated faculty now total 60 from 17 different departments in 8 different colleges/schools and an equally sizable and representative number of students.

Although IPR and the P & H initiative are distinct endeavors, IPR provides an intellectual “home” for P & H related interdisciplinary projects and activities and runs the seminar, workshops, and speakers series that complement the P & H activities. TIE funds have been used to supplement (but not replace) IPR center program funds and to hire a grants manager who will serve P & H faculty. During this past year, the IPR Executive Committee added additional faculty members, so that the three colleges collaborating with SBS in the TIE Population and Health program now have representation on the IPR board.

Overall, the relationship between IPR and the P & H initiative represents a good *potential* synergy, but it is important to recognize that the two initiatives do not completely overlap. P & H commitments extend beyond support for the IPR and it is essential that the budgets and accounting for the two entities not become too intermingled. However, that does not mean that TIE needs to be completely separate from IPR, but we sense that some are uneasy with this. Closer collaboration -- rather than more-or-less separate parallel programs (such as two separate seed grant competitions) as is presently the case -- is a distinctly win-win situation. Even though the P&H Coordinating Committee includes three members of the IPR Advisory/Executive Committee (Olsen, Casterline, Wewers), it is not clear whether this has resulted in close coordination of activities and programs.

Prospects and Concerns

The interdisciplinary scope of the Initiative in Population and Health is very broad, and there is no reason to expect that all aspects of the TIE activities will be highly integrated with each other. However, some evidence of new synergistic relationships across departments *and across projects* will be critical indicators of value-added by the TIE program funding. True interdisciplinary collaboration depends critically on the availability of sufficient and appropriately configured space and facilities where projects can be housed and faculty investigators can work and meet in close proximity. To provide such facilities for the P & H initiative, the SBS space plan included

a proposal to move IPR to the basement of Townshend Hall and to invest up to \$1 million to renovate the space appropriately. That the requested space for IPR was not forthcoming is of significant concern.

The current space occupied by IPR in the Journalism Building is not adequate in size or configuration to meet the needs of an interdisciplinary research center of this scope. The absence of adequate space will no doubt have some impact on the prospects for IPR's success in securing R24 center grant funding from NICHD. More importantly for the present review, it will be an impediment to the goals and mission of the P & H initiative. The space in Townshend Hall would have placed IPR in a central location near P & H affiliated faculty from Sociology, Psychology, Public Health, and Nursing, and easy access from other SBS and College of Medicine departments. The decision to instead locate administrative personnel and services in prime academic space is a major disappointment.

There is also need for greater clarification of the role of the Coordinating Committee as the leadership body for the P & H TIE program. Is this group charged with more than just administering the seed grant competition? We would recommend that P&H engage in a broad organizational planning exercise that spells out how its various endeavors are going to be tied together, how a community is going to be built, how 2+2=5, are going to happen. What we envision here is that the Coordinating Committee (or another, related group) meet with some frequency, map out what has been accomplished, what needs to be done, and how the enterprise is ultimately to be evaluated.

As a final note, we would like to commend the College of Social and Behavioral Sciences for providing a first-year annual report with sufficient detail and documentation to give us a good idea of what activities and investments are underway and what progress has been made.

Translational Plant Sciences Initiative

Summary of funding awarded: This TIE was awarded central funds totaling \$3,225,000 in cash and \$156,500 in continuing funds for a 5-year period beginning July 2007. Upon receipt of a rational first year implementation plan, those funds would be released. Two colleges are also making substantial commitments of continuing funds towards the initiative: \$377,000 from CBS and \$319,100 from FAES, respectively. The college's commitments of cash are \$1,580,000 from CBS and \$1,393,250 from FAES. A five-year plan was due in November 2006 or with the first year report.

Summary of Implementation: On November 1, 2006, an Implementation Plan developed by the Plant Molecular Biology/Biotechnology (PMBB) Program faculty, was submitted with approval from CBS and FAES. Hiring faculty is a major component of this TIE proposal and will commence with the hiring of an Assistant Professor in Year 1, two Assistant Professors in Year 2, and two additional Assistant Professors in Year 3 with all of these positions being supported by the \$2M cash from the TIE. The plan also includes 3 staff positions to be filled in Year 3 to be supported by the TIE AR. In addition, \$1,025,000 cash will be designated for Shared Equipment in Year 2. Starting in Y2, various activities such as a genomics workshop, travel, and a retreat will begin. PMBB members included 21 faculty in Columbus and 10 in Wooster.

The Translational Plant Sciences TIE program will accelerate hiring of faculty across four departments, will provide common equipment for cutting-edge research, and will nucleate programming for students, staff, and faculty. The final figures proposed in the budget deviate somewhat from the numbers in the award letter, but the faculty and deans strongly support the modest realignment of resources as outlined there. It is not easy to clearly delineate CBS from FAES investments in PMBB, and the proposed budget represents the consensus of all parties of how best to leverage both the TIE and college funds.

Overall, this implementation plan is well detailed including a budget page, faculty listing and information on inter-departmental structure and governance.

a. Are the accomplishments adequate and is there an appropriate trajectory for success?

The report submitted is very brief (one paragraph). It states that no funding was received for fiscal year 07, and indeed there are no central funds requested in the Nov 2006 budget. Funds were obtained from the BOR specifically for graduate education "pertinent to the TIE" and one or two "exceptional" graduate students have been recruited to PMBB using these funds. The BOR funds were also used to initiate a summer undergraduate research program this summer.

b. Are there significant threats to success? If so, what might those be? It is not clear why the hire of an Assistant Professor in Microbiology (funded by the college) was not carried out as planned. The budget outlines total of \$823,250 in commitments from the college in FY07. Were these funds expended in the manner proposed (hiring, renovation, programming)?

c. Are there opportunities to enhance success? If so, what might those be? It is essential that the college uphold its commitment of matching funds for faculty hiring and other activities.

It is essential that the programming activities proposed to start in Y2 are actually carried out (workshop, annual retreat, etc).

d. Are there concerns regarding the projected allocation of funds for the next academic year? No

Music Industry Program

Summary of funding awarded

This TIE was awarded central funds totaling \$137,000 in cash and \$315,500 in continuing funds for a 5-year period beginning July 2007. The College of the Arts is also making a substantial commitment of continuing funds and cash towards the initiative: \$322,676 and \$137,215, respectively.

Accomplishments, Documentation

Oddly, the initial proposal never defines the Music Industry, although we can gather what the proposers have in mind from the discussion. The definition of the field comes out more clearly in the annual report.

A number of meeting activities are reported devoted to the development of a curriculum for the proposed degree program, but details of who was involved on a regular basis were not provided in the report. Who and which departments? The major accomplishment for the year appears to be the search and selection of a new (Associate Professor level) music faculty member who will serve as director of the program. An offer has been made and accepted but at the time of the report, the appointment was still being processed and information on the qualifications of the appointee are not provided. To whom did the offer go? His/her qualifications? One of the tasks for the year was to create a job description. It would be good to see it. Describe the national search? How extensive? Quality of applicants?

What was the purpose of the focus groups? Who attended, with what consequence?

The yearly budget plan indicates that the proposers will identify desired equipment for the new recording studio, put out bids, and make purchases. What happened?

Concerns

In the proposal and the implementation plan, the School of Music provided a list of departments and disciplines (including business, engineering, applied computer sciences, communications, speech and hearing) that would be incorporated in the Music Industry program curriculum. Although the report indicates that faculty from these colleges and departments were “contacted,” it is not clear how many have actually been involved in the various focus groups and planning meetings. Indeed, the list of “contacted” faculty is long that it does not seem credible that all of them could be substantively involved in the design or implementation of the program. Who is *really* involved? Who are the central players? Do you have a coordinating committee? The list of identified courses (on p. 3 of the report) is very thin. Of particular concern is the absence of evidence of any involvement from or courses in the College of Business, which would seem to be critical to the interdisciplinary goals of this program.

There is little evidence of any actual expenditures by the School of Music (either College or OAA funds) during this first year. Other than funding one faculty member to attend the Brevard Conference (and perhaps costs associated with faculty recruitment), we did not see any funded activities in the report. The OAA response to the College's implementation plan called for reconciling first-year expenditures, but we did not see any response to this in this annual report.

Overall, the report provides a lot of information about process but very little about products. We need more documentation, across the board. Tell us what you did, not what you proposed to do or how you did it.

MicroRNA genes in the diagnosis, prognosis, prevention and therapy of cancer

Summary of funding awarded: This TIE was awarded central funds of \$6,134,888 in cash for a 5-year period beginning July 2007. The five-year college commitments in continuing funds are \$1,250,000 from the College of Veterinary Medicine; \$1,125,000 from the College of Pharmacy; and \$925,000 from the Department of Chemistry. In addition, the five-year cash commitments are: \$9,875,000 from the Comprehensive Cancer Center; \$1M from the College of Veterinary Medicine; \$1.5M from the College of Pharmacy; and \$900,000 from the Department of Chemistry.

Summary of implementation plan: The Implementation Plan submitted Nov 1, 2006 provides a breakdown of how the \$1,644,750 TIE budget for the first year will be allocated. \$927,115 will be allocated to Dr. Croce and his associates for tumor profiling and the development of animal models. \$300,000 will be allocated to Dr. Byrd, Dr. Marcucci and their associates for the therapeutic studies in Croce's mice. \$131,580 will be allocated to Dr. Rush and her associates for the in vivo pilot studies. \$180,923 will be allocated to Dr. Chan for his pharmacodynamics and pharmacokinetics studies of microRNA in mice and dogs. Finally \$115,113 will be allocated to Dr. Dutta and his associates to develop mimetics for microRNAs and their antisense. At this time it is impossible to determine exact contributions by each college but this will be reconciled by the end of the 5-year proposal.

According to the Implementation Plan submitted on Nov 1, 2006, the first year will be devoted to defining diagnostic and prognostic signatures of the most common and deadly human cancers, including breast, prostate, lung, colon and esophageal tumors; all these studies will be conducted by the PI and his associates in the Cancer Center. The remainder of the implementation plan discusses the overall plan of using microRNAs and their antisense to prevent and cure malignancies induced by microRNA dysregulation. The plan went on to describe the following collaborations: (a) between the PI and veterinary faculty in using microRNA for the treatment of dog lymphomas, (b) between the PI and other senior faculty in the College of Medicine and the College of Pharmacy to conduct pharmacodynamic and pharmacokinetic studies in mice and on the use of the microRNAs and their antisense in mouse tumor models (the mouse studies are described as pre-requisite to the planned clinical trials in humans), and (c) between the PI and other senior faculty in the Colleges of Medicine, Pharmacy, Veterinary Medicine, and Chemistry to develop mimetics of microRNAs and their antisense. The PI has predicted that the above programmatic activities will lead to many federal awards, including at least two program project grants and five R01 grants, with a total amount of \$35-65M or 6-8 times the TIE investment from central.

a. Are the accomplishments adequate and is there an appropriate trajectory for success?

Research on microRNA genes in human diseases, particularly cancer is very timely and the investment of University funds to support the targeted research teams in this endeavor should help to establish OSU as a leader in this rapidly advancing field.

The progress report lists a large number of publications (19), with many in high impact journals, that were cited and presentations indicated (only in general way, but not specifically listed), which supports the research productivity of Dr. Croce's lab. Based on the extensive existing internal and external funding support for this program, this level of productivity in publication would be expected. The progress report further lists the PI's honors or awards.

The report does not discuss (a) progress in building the program or advancing the planned/intended collaborations, (b) progress in other investigators' laboratories, (c) grant applications submitted or funded based on the TIE initiative, or (d) plans for making sure that the stated goals will be met. The limited information provided in the progress report does not support adequate progress and does not allow the assessment of trajectory for success. Another major concern is that the microRNA project was already well funded and established, so the contribution of the new University TIE funding is difficult to assess. Presumably in future reports this will be further and more clearly delineated.

Because the PI's expectations were that the TIE funding would provide additional preliminary data needed for NIH R01 (5 anticipated) and program project (2 anticipated) applications, a list of all new grants submitted directly applicable to the proposed research and TIE funding should be included in future reports. Also new patents related to the translational aspects of the program should be noted.

The PI states that because only three months have lapsed since receipt of TIE funding (March-May 2007), only a limited assessment of the short term progress and impact is possible. The reviewers are sympathetic with the short time frame with which the PI has had to work. It is noted, however, the TIE program stipulates that the TIE-support is for programs that would have been undertaken by the academic/interdisciplinary units irrespective of the TIE funding. Furthermore, the deans have been informed of the funding as of June 2006, and the PIs of TIE programs have agreed to annual evaluation. Finally, all TIE programs should be evaluated and held accountable using uniform standards and expectations of productivity.

b. Are there significant threats to success? If so, what might those be? The most important determinant of success is the PI; his outstanding and demonstrated scientific and administrative leadership is VITAL to the program. His absence will be a serious threat to the program.

The success of the program further depends on the integration of multiple teams to accomplish the stated goals of translating discoveries in microRNA into cancer therapeutics. The annual report does not discuss progress in programmatic integration. It appears there were no publications (or none cited) related to the collaborative work in the labs of the co-investigators (Drs. Byrd, Marcucci, Rush, Chan and Dutta), but it is anticipated that these should appear as the collaborations materialize. This is important because for future NIH program grants evidence of pre-existing collaborations and publications by the research program team members will enhance the competitiveness by documenting an established and productive research team and focus. Also in future annual reports a timeline as originally proposed with targets achieved or modifications should be submitted. There is no indication in the report for any established

system for meetings or communications among the research team members, but this too would strengthen the team approach as proposed.

c. Are there opportunities to enhance success? If so, what might those be? The PI and the deans of the five colleges, as well as the leadership of the cancer center, are encouraged to foster interactions and grant application planning activities in the near future.

d. Are there concerns regarding the projected allocation of funds for the next academic year? No funding allocations (TIE or college matches) were provided for year 2—presumably they are the same as for year 1 and all collaborators/colleges have agreed to these allocations, but this was not stated.

The lack of data or progress in the self-proposed metrics for measuring programmatic success (e.g., programmatic interactions, submitting grant applications, joint publications, initiating clinical trials in companion animals or humans) is of concern. Some measures of accountability are warranted. In addition, the release of funds needs to take into account the potential threats to success.

In view of the modest progress documented to date, while taking into consideration the relatively short time frame since the PI received TIE funding, it is suggested that the PI be given an additional 6 months to submit an updated annual report, at which time OAA can decide on the allocation of the Year Two funds.

Appendix I

PPAC Review Protocol

- * A small group (myself and 3 or 4 others) will assign each of the progress reports to 3 PPAC members knowledgeable but not directly involved with the proposal. This group will also draw up guidelines for the 3-person review panel reports, so there will be some commonality across the PPAC review.

- * The 3-person panels will prepare among themselves, using email and/or meetings, a report on the given proposal.

- * The reports will be emailed to me before a given deadline a couple of weeks hence. I'll post them on a website with a "secure" URL which I will email to all PPAC members participating in the reviews.

- * A comment period of about a week will follow the posting. Comments can be emailed to me and will be posted on the same web site.

- * At the end of the comment period the 3-person review panel will revise their report taking into account the comments and the "final" report will again be posted for a brief period. If any individual PPAC member is still not satisfied with the report, he/she may so email me and their comments will be forwarded to OAA as a dissenting opinion.