MEMORANDUM

August 17, 2006

To: Dr. Chin Yang, Dr. Neil Ringler (Dean of Research), Dr. Bruce Bongarten (Provost), Ms. Brenda Greenfield (Director, ESF Foundation)

From: Dr. Susan Anagnost, Dr. Thomas Keenan (Post-Doctoral Research Fellow) Dr. James Nakas, Dr. Edson Setliff (visiting scientist), Dr. Chun Wang

Re: Annual Report, Center for Applied Microbiology, July 1, 2005-August 15, 2006

The Center for Applied Microbiology was established through a generous donation by Dr. Chin Yang in 2004 and has now completed the second full year of operation. The following represents a summary of research-related activities during the period from July 1, 2005-August 15, 2006.

I Personnel

The senior faculty remain unchanged and consist of Dr. Chun Wang, Dr. Susan Anagnost, and Dr. Jim Nakas. Dr. Edson Setliff was a visiting scientist throughout this time period working with Drs. Wang and Anagnost on fungal presence and indoor air quality. The Center also provided a partial graduate student stipend for Ms. Shuang Zhou who received her PhD during this time period working in Dr. Anagnost’s laboratory. Dr. Tom Keenan continues his work on biodegradable plastics (polyhydroxyalkanoates, PHAs) and ethanol production, both from the hemicellulosic component of wood. The latter projects are in keeping with the recent initiatives by the College in the general arena of creating a wood-based biorefinery here at ESF. In addition, Dr. Keenan has just recently been offered a faculty position here at ESF and he has accepted. He will officially be on staff as a faculty member within the next 2-4 weeks with a 50-50 appointment between Paper Science and Engineering and Biology. This will be a significant addition to the CAM working group and we look forward to his participation as a permanent faculty member.

In addition, Mr. Kelvin Yang (undergraduate student at Cornell) joined our group during the summer of 2006 for a six week internship in Dr. Nakas’s laboratory. We were happy to have him join our group and we hope that he gained some valuable laboratory experience.

II. Funding

Support was provided for Dr. Setliff and Ms. Shuang Zhou during 2005-2006. Of the original $31,000 in the 05-06 budget, approximately $25,000 was expended to support both scientists during this time period.

Ms. Zhou successfully completed her PhD degree during this time interval and it is comforting to know that the Center for Applied Microbiology (CAM) played a critical role in her
development. Ms. Zhou is currently a Post-Doctoral Research Fellow working in Dr. Anagnost’s laboratory.

Dr. Setliff worked 25% time for the period May 2005-August 31, 2006 for the Center for Applied Microbiology. His efforts included a compilation of literature on the development of new wood preservatives and indoor bioaerosols. Dr. Setliff’s appointment (May 12, 2005 through August 31, 2006) was part-time (25% from CAM, 25% from EPA) but he will interact with Drs. Wang and Anagnost on an as-needed basis. For the time period of July 31, 2005 through August 30, 2006, his salary from the Center for Applied Microbiology was $14,000, and benefits around $7,000, for a total of $21,000. Shuang Zhou, Graduate Assistant and Postdoctoral Associate, CMWPE. Dr. Zhou’s support for this period was from EPA through the Syracuse Center of Excellence and New York Indoor Environmental Quality (NYIEQ); prior support in 2005 was from the Center for Applied Microbiology.

III. Activities:

The activities of the Center are listed below for Drs. Susan Anagnost, Edson Setliff, CJK Wang and Shuang Zhou.

Publications:


Invited Presentations:


Poster Presentations:


Funded Research:

Maintaince of Culture Collection

With ESF Work/Study students' help, all cultures were organized from various research projects. EPA cultures of Basidiomycetes, hyaline unknown, and portion of the microfungi, were transferred onto fresh agar slants. Wang's cultures from Pulp & Paper study, and lignicolous hyphomycetes were also transferred. Subcultures of a small number of the isolates from pole projects (P-, ED-, EP-) were made. Authenticated cultures from CDC, CBS, DAOM, NCMH, NIH, UAMH, P & K and others were also transferred. They are stored in Room 428, and 448 in Illick Hall.

Work/Study students were Jason Oliver, Cesar Herrera and Debbie Diehl.
Budget

Fisher Iso Temperature Standard Capacity Refrigerated Incubator $2731.51.
Test tube racks, $ 402.95

Following is a summary of activities from Dr. Nakas’s laboratory during the period of July 1, 2005-August 30, 2006.

Publications:


Presentations:

1. Industrial and Commercial Groups, etc.

   Numerous short presentations, demonstrations, tours, etc., to corporate/commercial groups on bioenergy, biofuels, biomaterials; wood digestion, and microbial fermentation facilities in the pilot plant area of Walters Hall, including a visit by the governor (May 8th).

2. Public Service Presentations


c). Invited speaker, Dept. of Industrial Design (Syracuse University), National Conference, Spring, 2006 Biodegradable Plastics, attendance 320.

d.) Presentations on bioenergy/biofuels/biomaterials to groups visiting ESF from agencies/corporations:
   1) Director of DEC, April, 2006, attendance 12 (approx.).
   2) Representatives from GE, April, 2006, attendance 10 (approx.).
   3) Representatives from Corning Glass, April, 2006, attendance 10 (approx.).
   4) Many similar presentations in Bray Hall.

Supported Research

   a) NASA, Biodegradable Plastics from Wood, $75,000—active as of 7/1/2006
   b) NASA, Microbiological Production from Wood, $75,000—“
   c) Dept. of Energy, $90,000, Biodegradable Plastics from Wood—active as of 8/1/2006

Activities External to ESF

   1). Science Advisory Committee: Central New York Med Tech
   2). Organization Committee: Biotechnology Research Center (BRC)

      The above two committees have taken up an enormous amount of time and effort but will pay dividends in the future. For example, the CNY Med Tech meetings have been extremely useful from the standpoint of corporate contacts and the BRC, although a virtual building now, will become a reality on the university hill area and we hope to have a presence there in terms of office space/laboratories/fermentation facilities.

   3). Member Citizens Advisory Committee, Bristol-Myers Squibb, Syracuse, New York
   4). Member, Institutional Biosafety Committee, Bristol-Myers Squibb, Syracuse, New York

   Accomplishments during the past year include generating corporate interest in our research activities here at ESF. Positive relations and collaborative arrangements have been established among Tessy Plastics, Welch Allyn, and ESF for the purpose of producing biodegradable plastic for WA by Tessy plastics using the polymers produced in our laboratory.

   Much interest has also been generated from GE and Corning, again for the plastics research. Also, a presentation at Burrows Papers (Little Falls, New York) resulted in keen interest to coat paper with our polymers for use in the fast food industry. Their biggest client is McDonald’s.
Drs. Keenan and Nakas (almost all Dr. Keenan) taught a new course for the Bioprocess Engineering Certificate Program. Our component was the microbiology/biochemistry portion. Also taught (for the 2nd year) a new course entitled Microbiological Diseases of Fish and Wildlife.

If you have any comments or questions regarding the activities of the Center for Applied Microbiology at ESF, please do hesitate to write or call (315-70-6769).

Best Regards,

Jim Nakas
Professor of Microbiology