A PROPOSAL FOR THE ESTABLISHMENT OF THE AEROSPACE CONSORTIUM OF ALABAMA (ACA)

BY

AUBURN UNIVERSITY
THE UNIVERSITY OF ALABAMA
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE
# Table of Content

Proposal ................................................................. 3
Mission ................................................................. 3
Vision ................................................................. 3
Goals of the ACA ....................................................... 4
Articles of Agreement ............................................... 5
Operation of the Consortium ........................................ 6
Board of Directors .................................................... 7
ACA Director ........................................................ 7
Assessment of the ACA ............................................... 7
Interaction with Other Colleges and Universities in Alabama 8
Support for K-12 Education ......................................... 8
Changes in Operational Procedure ............................... 8
Summary ............................................................... 9
Appendix A: Existing Facilities ..................................... 13
Auburn University Existing Facilities .............................. 13
The University of Alabama Existing Facilities ................. 28
UAHuntsville Existing Facilities ................................... 38
Appendix B: Faculty .................................................. 53
Auburn University Faculty .......................................... 53
The University of Alabama Faculty ............................... 67
UAHuntsville Faculty ................................................. 96
PROPOSAL

Auburn University, The University of Alabama, and The University of Alabama in Huntsville hereby propose to establish the Aerospace Consortium of Alabama, hereafter referred to as ACA or the "Consortium". The purpose of the Consortium is to establish the State of Alabama as an international center of excellence in aerospace education and research. The Consortium will effect major improvement in the education level and in the economic status of the state's citizens through the facilitation of shared resources and enhanced collaboration between three of the state's leading institutions of higher education.

MISSION

The mission of the Aerospace Consortium of Alabama (ACA) is to serve the aerospace industry and the State of Alabama by producing a skilled, professional workforce through graduate level education and collaboration with industrial and government partners in performing cutting-edge research at a level that would not be possible through individual efforts of either University.

VISION

To facilitate and accomplish this objective, Auburn University, The University of Alabama Huntsville (UAH), and The University of Alabama (UA) propose to form the ACA. The field of aerospace engineering continues to be a growing and dynamic part of the economic future of the state. It has growth potential in both the northern and southern regions of the state. As NASA, the U.S. Army, and companies such as Boeing, Lockheed and Northrop Grumman (to name just a few), expand and/or create new operations in Alabama, the demand for highly competent senior aerospace engineers will continue to increase.

Three of the principal institutions in the state already offer undergraduate and graduate education in the area of aerospace engineering. However, the ACA will offer a unique experience that draws on the collective strengths of the campuses of Auburn, UAH, and UA. Advanced degree opportunities at these three institutions already exist and each of these programs are staffed by highly qualified faculty. However, because of resources, each of these individual programs are limited in competing with similar programs such as those in Georgia (Georgia Tech), Florida (University of Florida), Mississippi (Mississippi State) and Texas (University of Texas at Austin and Texas A&M). One of the major goals of the ACA is to consolidate the strengths of all three programs to present a common, competitive front that will elevate all three programs to a position of advantage in the region.

In addition to the growing need for highly skilled professionals with advanced degrees in aerospace engineering, it is essential that our graduates earn degrees with the appropriate designation. To this end, we propose to employ the following strategies:

1. Establish a Master's Degree and a PhD in Aerospace Systems Engineering at UAHuntsville, rather than as a general PhD.
2. Change the name of the existing PhD degree at UA from Engineering Science and Mechanics to Aerospace Engineering and Mechanics.

3. Develop a closer collaborative partnership among the three participating institutions in the ACA.

The Aerospace Consortium of Alabama, proposed in this document, will enable students and faculty at all three campuses of the Consortium to share resources and specialized equipment on the campuses of other member institutions. The overall goal is to make the State of Alabama itself more competitive with the institutions mentioned above. The three member institutions in the ACA will continue to offer separate degrees, but allow students, through appropriate formal means, to access course offerings, seminars, laboratory facilities, etc., at the other campuses. The ACA will also provide the mechanism for faculty to serve on graduate committees at other member institutions. In fact, we propose to give adjunct graduate faculty status to members of the graduate faculties of the other Consortium institutions. This means that aerospace engineering students will have the best possible mentorship and advising that the State of Alabama can offer for their graduate education and research. Furthermore, the establishment of the ACA will enable teaming opportunities for member institutions, by providing a process for efficient submission of large multi-investigator proposals to federal funding agencies such as NSF, NASA, DARPA, AFOSR, ARO, and ONR. The ACA will have enhanced capability for partnering with corporate entities. Finally, the ACA will be leveraging the aerospace assets of the entire state, which will enable it to compete effectively regionally, nationally, and internationally.

GOALS OF THE ACA

1. Increase the national stature of the Consortium institutions
2. Attract new aerospace industry to the State of Alabama
3. Develop state of the art research laboratories
4. Expand opportunities for collaborative research
5. Enhance the recruitment of graduate students
6. Increase the number of doctoral graduates in aerospace engineering
7. Increase external funding for research and education
8. Enhance graduate educational opportunities through distance learning
9. Streamline graduate course scheduling
10. Provide assistance to improve K-12 STEM education in the aerospace sciences, an effort that could be a national model

ARTICLES OF AGREEMENT

In order to establish the Aerospace Consortium of Alabama (ACA), Auburn University, the University of Alabama, and the University of Alabama in Huntsville ("the Consortium institutions") have agreed to the following articles:

1. Oversight and operation of the Consortium will be as described in the section that follows entitled, "Operation of the Consortium."

2. The collaborating institutions will apply jointly for competitive extramural funding, as appropriate.

3. A mechanism for assessing the effectiveness of the Consortium will be developed and implemented at the direction of the Board of Directors. Assessment of the effectiveness of the Consortium in meeting its mission goals will be made annually and presented in a written report to the Provosts at all three institutions.

4. Collaborative graduate programs in distributed aerospace engineering programs through the Ph.D. will be allowed for each of the three Consortium members (Auburn University, The University of Alabama, and The University of Alabama in Huntsville).

5. Any of the participating institutions may withdraw from the Consortium upon giving one-year’s notice in writing. If an institution’s aerospace graduate program is discontinued, that institution is no longer part of the Consortium.

6. A student admitted to the graduate school of one Consortium institution will be able to take a percentage of his/her required coursework from the other Consortium institutions without being formally admitted to the graduate schools of those institutions. Tuition for these courses will be retained by the student's institution, but the student credit hours will be claimed by the institution delivering the course.

7. Graduate committees will be strongly encouraged to include members from other Consortium institutions.

8. Students will be encouraged to take one or more courses at other institution members of the Consortium.

9. Aerospace faculties of the Consortium institutions will convene at least annually to review the strategic plan for research, instruction, and extension.

10. Graduate students at Consortium institutions will be allowed full and complete access to library collections, facilities, and services.

11. Graduate students at Consortium institutions will be able to access other laboratory and research equipment on an "as available" basis.

12. Full-time faculty members who are on the graduate faculty at each of the
Consortium institutions will be appointed adjunct faculty positions at the other Consortium institutions.

13. A faculty exchange program among the member institutions will be established.

14. These Articles of Agreement may be revised by unanimous consent of the Board of Directors, the deans, and the provosts of the three institutions.

OPERATION OF THE CONSORTIUM

Board of Directors

ACA Director

Auburn University Aerospace Engineering Ph.D. Program

The University of Alabama Aerospace Engineering & Mechanics Ph.D. Program

UAHuntsville Aerospace Systems Engineering Ph.D. Program
BOARD OF DIRECTORS

Oversight of the Consortium will be by a Board of Directors composed of the Chairs of the three collaborating Departments.

The Board of Directors will be responsible, in conjunction with the Deans and Provosts of the Universities, for establishing policy for the successful operation of the ACA.

ACA DIRECTOR

The directives of the Board of Directors shall be implemented by the ACA Director. The position will be on a rotating basis, among the chairs of the three departments.

His/her primary responsibility will be to coordinate activities of the consortium and to maintain communications among the three institutions. The ACA Director shall prepare an annual report on the activities of the Consortium for submittal to the deans and provosts of the three institutions.

ASSESSMENT OF THE ACA

The annual report of the ACA shall be submitted through the Board of Directors to the deans and provosts of the three institutions.

As a unique organization, the performance of the Consortium will be assessed using the information provided in the annual report. This information will include at a minimum:

1. aerospace external research funding awarded to the member institutions,
2. faculty and student publications,
3. numbers of graduates from each program,
4. service to industry,
5. service to K-12 education (as funded) and
6. the extent of collaboration among the member institutions as evidenced by:
   a. number of classes taken by graduate students at another Consortium institution,
   b. graduate committee membership at another Consortium institution,
   c. collaborative research proposals,
   d. sharing of research facilities,
   e. joint seminars, and
   f. other means as appropriate.
The ACHE viability criteria regarding numbers of PhD graduates will be calculated using the sum of the degrees granted by Consortium members.

INTERACTION WITH OTHER COLLEGES AND UNIVERSITIES IN ALABAMA

The ACA will serve as a resource to other institutions in the State by inviting representatives of these institutions to attend research seminars and engineers' day activities. From time to time, the Consortium may offer short courses, seminars, and credit courses by distance education technology to sites at these institutions. Efforts will be made to interact with these institutions so that qualified students have an understanding of the ACA and are aware of the opportunity for pursuing graduate education through the Consortium. Faculty members at the other two- and four-year institutions will be encouraged to participate with faculty at Consortium institutions in the submittal of joint research proposals through the ACA.

SUPPORT FOR K-12 EDUCATION

The ACA is a natural source for outreach to K-12 students. Each member school in the Consortium already participates in the Engineering Academy Initiative for Alabama (EAIA). Through the EAIA, college faculty and students provide relevant curriculum, real-world activities, and teacher professional development opportunities to approximately twenty-five Alabama high schools with pre-engineering programs. Recently, the State of Alabama proposed to join a program that is overseen by the Southern Regional Education Board (SREB) to provide curriculum enrichment to students with a specific interest in aerospace sciences and the aerospace industry. A consortium of eleven states will participate in the program, each with a different focus area. Alabama's focus area will be Aerodynamics, Flight Systems, Aerospace Materials, etc. The ACA can become the academic leader in this effort by providing faculty assistance and resources for the development of projects and contact points for interested students. The goal of the SREB initiative in the State of Alabama is to devise a sequence of four challenging career/technical (CT) courses that will be "organized around authentic problems that will enable students to test their interests and aptitudes in the context of a career field while deepening their academic and technical knowledge and skills..." The ACA, partnering with other professional teachers and professionals in the aerospace industry, can be an active participant in the development and continued success of this program.

CHANGES IN OPERATIONAL PROCEDURES

Changes in the operational procedures for the ACA may be implemented through recommendation to the deans and provosts of the three institutions and as a result of their approval.
SUMMARY

This proposal requests establishment of the Aerospace Consortium of Alabama (ACA). The purpose of the Consortium is to improve the economic and educational level of the state's citizens by producing a skilled, professional workforce through graduate level education, and collaboration with industrial and government partners in performing cutting-edge research. The probability of achieving the goals of the ACA is very high if the Consortium is established.
We, the undersigned, enter this agreement on behalf of our respective institutions:

For: Auburn University:

[Signature]
Provost

For: The University of Alabama:

[Signature]
Provost

For: The University of Alabama in Huntsville:

[Signature]
Provost

March 12, 2011