THE WORK OF THE SOA ACCREDITATION IMPLEMENTATION TASK FORCE: A STATUS REPORT AND OPPORTUNITY FOR FEEDBACK

At its October 2004 meeting, the Society of Actuaries (SOA) Board of Governors passed the following motion

> "The Board of Governors accepts and approves the Report of the Task Force on Academic Infrastructure. The Board approves, in principle, the undertaking of a process of accreditation for academic actuarial science programs, consistent with the recommendations contained in the Report, and appoints an Implementation Task Force to establish the rules and procedures of such accreditation process. The Implementation Working Group is to report its completed task to the Board at its June 2005, meeting."

As of the end of May 2005, the SOA Accreditation Implementation Task Force (AITF) has draft rules and procedures for a system of accrediting academic actuarial science programs, and is scheduled to discuss several issues with the SOA Board in June. After the June Board meeting, the AITF will update its draft materials for presentation and discussion at the Actuarial Research Conference (ARC). The goal is to post a draft to the SOA website, along with a survey for feedback, in September before presentation of final recommendations to the SOA Board in November.

The presentation at ARC will discuss the why, how and what - the motivation, the design process and the resulting design - of an accreditation system as then currently envisioned by the task force, and include an opportunity for ARC attendees to provide feedback.

SOCIETY OF ACTUARIES

THE WORK OF THE SOA ACCREDITATION IMPLEMENTATION TASK FORCE:

A Status Report and Opportunity for Feedback

BACKGROUND DOCUMENT

DRAFT COVER FOR POSTING

SOA Accreditation of Academic Actuarial Science Programs: A draft for your review and comment

At its October 2004 meeting, the SOA Board of Governors passed the following motion

> "The Board of Governors accepts and approves the Report of the Task Force on Academic Infrastructure. The Board approves, in principle, the undertaking of a process of accreditation for academic actuarial science programs, consistent with the recommendations contained in the Report, and appoints an Implementation Task Force to establish the rules and procedures of such accreditation process. The Implementation Working Group is to report its completed task to the Board at its June 2005, meeting."

The Board has agreed to defer the report's due date in order to allow for the opportunity to obtain feedback from a broad range of potentially interested constituencies through this posting.

The Accreditation Implementation Task Force (AITF) has posted a draft of the proposed criteria, structure and procedures for an accreditation system. The draft can be accessed at (**HOT LINK TO BE PROVIDED BY SOA STAFF**).

We ask that you provide your feedback through the online survey, which can be accessed at (**HOT LINK TO BE PROVIDED BY SOA STAFF**). For other than College or University employees, we estimate the survey may take 20 minutes to complete after the draft report has been reviewed. We anticipate College or University employees will need 5-10 more minutes to complete their additional questions.

In order for the AITF to carefully consider the feedback received before presenting a proposal to the SOA Board, the AITF has set a deadline of **TBD** for feedback. Thus, this survey will no longer be available after 5:00 p.m. on **TBD**

Thank you! We very much appreciate you taking the time to review the draft and provide feedback.

The Accreditation Implementation Task Force

Douglas Borton, Jim Daniel, Victor de la Peña, Mary Rosalyn Hardy, Bryan Hearsey,
Curtis Huntington, Michel Jacques, Stuart Klugman, Warren Luckner, Cynthia Miller, Wolfe Snow,
Jeyaraj Vadiveloo, Catherine Wallach

REPORT OF THE SOCIETY OF ACTUARIES ACCREDITATION IMPLEMENTATION TASK FORCE

(DATE TBD)

Douglas Borton
James W. Daniel
Victor de la Peña
Mary Rosalyn Hardy
Bryan Hearsey
Curtis Huntington
Michel Jacques
Stuart Klugman
Warren Luckner
Cynthia Miller
Wolfe Snow
Jeyaraj Vadiveloo
Catherine Wallach

SOCIETY OF ACTUARIES

Society of Actuaries
475 North Martingale Road
Suite 600
Schaumburg, Illinois 60173-2226
847-706-3500
847-706-3599 Fax

ACCREDITATION IMPLEMENTATION TASK FORCE MEMBERS

Douglas Borton, FSA, FCA, MAAA, FCIA, EA (Retirement Systems)

James W. Daniel, PhD, ASA (Academic, Advanced Undergraduate, Graduate Research, SOA Education and Research Section), Paul V. Montgomery Professor and Director of Actuarial Sciences, University of Texas at Austin

Victor de la Peña, PhD (Academic, Introductory Undergraduate, Fellow of IMS (Institute of Mathematical Statistics)), Columbia University

Mary Rosalyn Hardy, PhD, FIA, FSA (Academic, Graduate-Research, Board, Life Insurance, Finance, E&R), CIBC Professor of Financial Risk Management, University of Waterloo

Bryan Hearsey, PhD, ASA (Academic, CAS Academic Correspondent, Advanced Undergraduate, Radcliffe Task Force, small college), Professor of Mathematics, Lebanon Valley College

Curtis Huntington, JD, FSA, FCA, MAAA (Academic, CAS Academic Correspondent, Graduate-Research, Joint CIA, CAS, SOA Committee on Academic Relations, SOA Education and Research Section Friend, Life Insurance, Reinsurance, NAFTA, IAA Education Committee), Professor, University of Michigan

Michel Jacques, PhD, ASA (CIA representative, Graduate, Life Insurance, Finance, Property & Casualty, Joint CIA, CAS, SOA Committee on Academic Relations), Professor, Laval University

Stuart Klugman, PhD, FSA, (Academic, CAS Academic Correspondent, Advanced Undergraduate, SOA Education and Research Section Friend, Education, Radcliffe Task Force, London Task Force), Principal Financial Group, Professor of Actuarial Science, Drake University

Warren Luckner, FSA, CFA, MAAA (Academic, Advanced Undergraduate, CAS Academic Correspondent, Graduate-Education, Board, Radcliffe Task Force, London Task Force), David P. Hayes Memorial Chair and Director of Actuarial Science, University of Nebraska-Lincoln

Cynthia Miller, FSA, MAAA (Health, Insurance Company), Vice President, Wellpoint Inc.

Wolfe Snow, PhD, ASA (Academic, Introductory Undergraduate), Associate Professor & Deputy Chairman, Brooklyn College, Dept. of Mathematics

Jeyaraj (Jay) Vadiveloo, PhD, FSA, MAAA (Life, Consulting), Sr. Manager, Deloitte Consulting LLP

Catherine Wallach, FSA, MAAA (Life, Insurance Company, Joint CIA, CAS, SOA Committee on Academic Relations), Assistant Vice President, Product Development, Pacific Life Insurance Company

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I. EXECUTIVE SUMMARY (*TO BE COMPLETED WHEN REPORT IS FINAL*)

II. INTRODUCTION AND BACKGROUND

A. October 2004 Society of Actuaries Board Action

At its October 2004 meeting, the Society of Actuaries (SOA) Board passed the following motion:

> *"The Board of Governors accepts and approves the Report of the Task Force on Academic Infrastructure. The Board approves, in principle, the undertaking of a process of accreditation for academic actuarial science programs, consistent with the recommendations contained in the Report, and appoints an Implementation Task Force to establish the rules and procedures of such accreditation process. The Implementation Task Force is to report its completed task to the Board at its June 2005 meeting."*

This motion provided the charge to the Accreditation Implementation Task Force (Task Force) to "establish the rules and procedures" of an accreditation system for academic actuarial science programs.

This motion is one of two motions that represent the culmination of the work of the SOA Task Force on Academic Infrastructure, and is a continuation of the work of the Joint CAS, CIA, SOA Task Force on Academic Relations, which in 1999 identified a system of accreditation of academic actuarial science programs as one of the longer-term initiatives that could strengthen the partnership between the academic community and the actuarial profession.

B. Relation to 2004-2007 SOA Strategic Plan

The Board's action in passing this motion is consistent with the following elements of the 2004-2007 SOA Strategic Plan:

> ***Membership Value***
> *Members and candidates receive expected benefits from the SOA through credentials, learning, research, services, and professional education, delivered by an effective SOA organization.*
>
> ***1.11*** *Deliver products and services focused on members, candidates, and customer needs while maintaining value of today's activities*
>
> ***Knowledge Management***
> *Opportunities are available for members and candidates to keep current on emerging intelligence in the actuarial profession and its business application through professional development.*
>
> ***2.4*** *Develop alliances and relationships to build systems to deliver knowledge, skills and abilities through education and assessment and research*
>
> ***2.9*** *Advance actuarial knowledge and education through research with practical, relevant applications*
>
> ***2.10*** *Become a premier provider of actuarial knowledge and education*
>
> ***2.11*** *Increase the number of credentialed professionals and certificants within actuarial science*

Marketplace Relevance
The SOA has a strong potential candidate supply, employers value the SOA credentials and actuaries have expanded opportunities to apply skills in new & traditional markets.

3.4 *Identify and grow future actuarial practitioners and leaders*

Professional Community Advancement
Through external relationships and professional collaboration, the entire profession is stronger, broader, and widely recognized in North America and globally.

4.6 *Engage the next generation in the value of actuarial science and its credential*

4.7 *Explore, develop and implement strategy for key areas: International and Academic*

C. General Objectives

As the Task Force designed the recommended system of accreditation, the following objectives for a partnership between the academic community and the actuarial profession[1] provided a general set of objectives against which to test the design:

1. To produce a sufficient number of highly qualified students and employees.
2. To produce a sufficient amount of theoretically sound and practical research.
3. To enhance the reputation of actuarial science within the academic community.
4. To enhance the reputation of the academic community within the actuarial profession, the business community and government.
5. To enhance public recognition of the profession.
6. To optimize the use of the combined resources of both the academic community and the actuarial profession.
7. To maintain a flexible and dynamic basic and continuing education system.
8. To support consistency of the relationship between the actuarial profession and the academic community throughout the world.

These objectives are detailed in Appendix A.

[1] As identified by the Joint CIA, CAS, SOA Task Force on Academic Relations

D. Task Force Members and Interested Parties

The process used to recruit Task Force members and interested parties is documented in Appendix B.

The members of the Task Force represent a variety of constituencies, including the various areas of practice and the academic community, both actuarial and non-actuarial, as well as a variety of points of view.

Tom Myers, FCAS, ASA, Vice President for Admissions of the Casualty Actuarial Society (CAS), agreed to serve as an "Interested Party". Other individuals also volunteered to serve as Interested Parties. These individuals, who received all the communications of the Task Force and provided feedback as they desired, are:

Sam Broverman, PhD, ASA, Professor, University of Toronto, Department of Statistics

Cecil Bykerk, FSA, MAAA, President, C D Bykerk Consulting LLC

Hans Buehlmann (international)

Peter Diethelm (Swiss actuarial association)

James Hickman, FSA, ACAS, Emeritus Professor and Dean, University of Wisconsin

Stephen Kellison, FSA, Consultant

R. Stephen Radcliffe, FSA, OneAmerica Financial Partners

Elias Shiu, PhD, ASA, Professor, University of Iowa, Dept. of Statistics and Actuarial Science

Aaron Tenenbein, PhD, ASA, MAAA, Professor, New York University

E. Remainder of the Report

The remainder of the report is organized as follows:

III. OBJECTIVES AND DESIRED CHARACTERISTICS OF AN ACCREDITATION SYSTEM

A. Motivation for an Accreditation System

The primary motivation for a system of accrediting academic actuarial science programs is to identify quality academic actuarial science programs and to provide meaningful information related to academic actuarial science education or research opportunities.

A well-constructed system of accreditation:

1. provides prospective students a better understanding of the nature and quality of the education available;
2. provides prospective employers a better understanding of the nature of graduates of accredited actuarial science programs;
3. provides recognition to institutions that have high quality academic education or research;
4. provides guidance and standards for institutions aspiring to develop and improve actuarial education or research;
5. encourages academic institutions to allocate resources to actuarial science programs;
6. encourages a stronger relationship between the academic institution and the actuarial profession;
7. gives the academic institutions the opportunity to provide input that could enhance professional actuarial education and research;
8. gives the actuarial profession the opportunity to provide input that can enhance the nature and quality of actuarial education provided at academic institutions; and
9. provides a list of schools that can be targeted by the actuarial profession and employers for additional support, such as an expansion of Validation by Educational Experience, scholarships, internships for students or academics, research funds, or endowed faculty positions.

B. Resulting Objectives and Desired Characteristics

Given the motivation for a system of accrediting academic actuarial science programs, the primary objective of an accreditation system is to make meaningful distinctions among schools regarding the nature and quality of the actuarial science education or research that is provided. Such distinctions can:

1. assist students in choosing schools for actuarial science education or research;
2. provide benefits for enhancement of the actuarial curriculum at schools offering actuarial science programs;
3. provide an information resource regarding the actuarial science education or research interests, capabilities and activities at specific colleges and universities;
4. assist employers in evaluating candidates for employment; and
5. create a stronger connection between the actuarial profession and the academic institution.

Given the diversity of academic institutions that produce successful members of the actuarial profession, and the large number of schools that offer some level of education related to actuarial science and information regarding the actuarial profession, the Task Force has identified the following desired characteristics of an accreditation system:

1. accommodates a diversity of academic institutions with various levels of commitment to actuarial science
2. simplicity and ease of administration;
3. easily understood;
4. multiple classifications with meaningful distinctions; and
5. flexibility to accommodate special circumstances.

IV. DEVELOPING THE RULES, STRUCTURE AND PROCEDURES FOR AN ACCREDITATION SYSTEM

A. Principles and Process

In developing the rules, structure and procedure for an accreditation system, the Task Force adhered to the above objectives and desired characteristics as well as the following principles, which are based in large part on the suggestions in the report of the Task Force on Academic Infrastructure.

1. The system should identify a set of accreditation criteria, which individual institutions can then meet or not at their choice, rather than set a specific goal for a predetermined number of accredited programs.
2. The total cost to implement and administer the process should be proportionate to the benefit obtained, and should be shared between SOA and the affected schools.
3. The system should not disenfranchise small schools (or small programs), many of which have for years been producing graduates who pursue a career in actuarial science.
4. The system should build upon the existing “Actuarial College Listings”.
5. The system should include a criterion for a curriculum that meets specified portions of the learning objectives for the preliminary education portion of the requirements for achieving Canadian and U.S. professional actuarial designations.

The process used to develop the rules, structure and procedures for an accreditation system included: review of background material; Task Force members providing their top three criteria for an accreditation system; discussion via email, conference calls and in-person meetings; discussion with accounting professors; seeking reactions from a wider audience through a posting on actuarial websites; and making revisions in response to feedback. Appendix C provides details regarding the various components of this process.

B. Resulting Rules, Structure, and Procedures

Rules

The rules recommended by the Task Force include both the criteria to be used to make the desired meaningful distinctions, and the rules for maintaining accreditation.

Criteria

To satisfy the desired characteristic of accommodating a diversity of academic institutions with various levels of commitment to actuarial science the structure of the recommended accreditation system has multiple classifications and not all of the recommended criteria need to be met for each classification. This is detailed in the Structure section.

The recommended criteria are intended to demonstrate that an accredited program has an explicit mission related to actuarial education or research. To satisfy the desired characteristic of simplicity and ease of administration, yet have a credible system, the Task Force believes it is important that the criteria are generally objective and easily verifiable from unbiased sources. Thus, the recommended criteria are:

1. The administrative unit in which the program is located is accredited by the appropriate academic accreditation organizations for baccalaureate or graduate educational institutions.
2. The actuarial science program has a mission with respect to the purpose and goals of the program, who it serves and what the program is trying to accomplish.
3. Nature and quality of actuarial science-related curriculum and faculty:
    a. The curriculum includes regularly offered courses that meet specified portions of the learning objectives for the preliminary education portion of the requirements for achieving Canadian and U.S. professional actuarial designations.
    b. Such courses are taught by qualified instructors.
    c. There is an identifiable actuarial science program with a set of requirements for completing the program.
4. Nature and quality of actuarial science-related research:
    a. One or more faculty members are actively involved in research related to actuarial science.
    b. Students participate in actuarial science research activities.
    c. A PhD program and supervision is available for students who wish to undertake research with an actuarial focus.

5. Nature and quality of connection to the actuarial profession:
    a. There is a designated full-time faculty member responsible for maintaining current knowledge of the actuarial profession and advising students regarding the actuarial profession and an actuarial career.
    b. There are activities that inform students about the practical and professional aspects of a career as an actuary.
    c. The program has an external actuarial advisory group.
    d. The graduates and research productivity of the program enhance the actuarial profession.

The current “Actuarial College Listings” require information regarding many of these items on a self-reported basis. Thus, the procedures for administering an accreditation system can build on an existing infrastructure.

Ongoing Accreditation

As with any formal accreditation system it is important to review accredited programs on a regular basis to ensure that accredited programs continue to satisfy the criteria for accreditation. This review is particularly important for actuarial science programs given the continually evolving nature of the requirements for achieving Canadian and U.S. professional actuarial designations. In addition, given a structure with multiple levels, such a review gives actuarial science programs an opportunity to move to a higher level of accreditation. The Task Force recommends that a scheduled review of accredited programs be completed no less frequently than every 5 years. Initially, the frequency of the scheduled reviews should be varied so that the administrative burden can be more evenly distributed. The Task Force also recommends that accredited programs be allowed to request an unscheduled review if it believes it can be accredited at a higher level as a result of changes it has made since the previous accreditation decision. A program not currently accredited may request a review at any time as long as at least one year has elapsed since the last review.

The Task Force recommends that there be an annual report from an accredited program, and a mechanism for the SOA to initiate an accreditation review. The annual report should be designed to be very easy to submit. For example, the SOA office could email the program contact a listing of the current information and ask the contact person to simply indicate any changes.

Structure

The Task Force considered both the structure of the accreditation system and the structure for administering the system.

Accreditation System Structure

To satisfy the desired characteristic of including a diversity of academic institutions with various levels of commitment to actuarial science, as well as the primary objective of making meaningful distinctions among such institutions, the Task Force recommends that the accreditation system include two accreditation designations, an education designation and a research designation, and that each designation have two levels. The two recommended education levels are “Accredited Pre-Actuarial Education Institution” and “Accredited Actuarial Education Institution”, and the two recommended research levels are “Accredited Actuarial Research Institution–Research Activity” and “Accredited Actuarial Research Institution–Research Activity and Advanced Graduate Studies”. The levels are distinguished by different missions related to actuarial science education or research

For the **education** designation, the levels are distinguished as follows.

1. Accredited Pre-Actuarial Education Institution: Undergraduate programs that:
    a. are committed to introducing students to the actuarial profession by providing opportunities for students to meet learning objectives related to the foundations of actuarial science, and opportunities for students to become familiar with the actuarial profession; and
    b. produce graduates who have satisfied one or more of the requirements to achieve Canadian or U.S. professional actuarial designations, seek actuarial employment or choose to attend graduate school in actuarial science.

2. Accredited Actuarial Education Institution: Undergraduate or graduate programs that:
    a. are committed to:
        i. providing students a significant education in the preliminary education portion of the requirements for achieving Canadian and U.S. professional actuarial designations;
        ii. assisting students in satisfying those requirements; and
        iii. exposing students to the practical and professional aspects of a career as an actuary
    b. produce graduates well-qualified to begin an actuarial career.

For the **research** designation, the levels are distinguished as follows:

3. Accredited Actuarial Research Institution – Research Activity: Undergraduate or Masters programs that have faculty and Bachelors or Masters students actively involved in research related to actuarial science.

4. Accredited Actuarial Research Institution – Research Activity and Advanced Graduate Studies: Graduate programs that:
   a. have faculty and students actively involved in research related to actuarial science;
   b. offer a Masters degree in actuarial science for students with an undergraduate degree in actuarial science or a PhD degree for students with an undergraduate or Masters degree in actuarial science; the PhD degree may be in actuarial science or a related discipline such as finance, economics, mathematics, or statistics;
   c. produce Masters graduates well-qualified to pursue a PhD degree or begin an actuarial career in business or government; and
   d. produce PhD graduates well-qualified to begin an actuarial career in academia as well as in business or government.

Tables I and II provide a summary of the distinctions.

TABLE I: ACADEMIC ACTUARIAL SCIENCE PROGRAMS DESIGNATED BY THE SOCIETY OF ACTUARIES AS "ACCREDITED ACTUARIAL *EDUCATION* INSTITUTIONS" ***(All accredited programs are located in an administrative unit accredited by the appropriate academic accreditation organization)***		
CRITERION	**PRE-ACTUARIAL**	**ACTUARIAL**
1. Nature and quality of actuarial science-related curriculum **(Note: This criterion requires that the courses be taught so that every student will have the opportunity to complete these courses in a four year period.)** ***Internet-based courses that are not considered independent study by the University, and for which the University gives academic credit are acceptable**	• Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Probability (P) Exam/CAS Exam 1. • Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Financial Mathematics (FM) Exam/CAS Exam 2. • Includes VEE-approved courses in at least one of Economics, Corporate Finance, and Applied Statistics. • There is evidence that communication skills are addressed.	• Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Probability (P) Exam/CAS Exam 1. • Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Financial Mathematics (FM) Exam/CAS Exam 2. • Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Actuarial Models (M) Exam and CAS Exam 3. • Includes course(s)*, other than independent study courses, that substantially cover the learning objectives for the Construction and Evaluation of Actuarial Models (C) Exam/CAS Exam 4. • Includes VEE-approved courses in all of Economics, Corporate Finance, and Applied Statistics. • There is an organized actuarial program, hereafter called the Program, with a set of requirements for completing the Program. This may be a major, a concentration, or whatever is appropriate in the organization of the particular school, but does lead to the student earning a ***bachelors, masters or doctorate degree.*** An interdisciplinary approach may be necessary at schools that do not have a large enough population of students or income generated from the Program. • Within the organized actuarial program, there is evidence that communication skills are addressed.

TABLE I (Continued): ACADEMIC ACTUARIAL SCIENCE PROGRAMS DESIGNATED BY THE SOCIETY OF ACTUARIES AS "ACCREDITED ACTUARIAL *EDUCATION* INSTITUTIONS" *(All accredited programs are located in an administrative unit accredited by the appropriate academic accreditation organization)*		
CRITERION	**PRE-ACTUARIAL**	**ACTUARIAL**
2. Faculty	• The class(es) substantially covering the learning objectives for SOA Exam FM/CAS Exam 2, are taught by instructors with appropriate qualifications, as attested to by a designated full-time faculty member who is a member or correspondent member of the CAS or the SOA. Qualifications to be considered may include past teaching experience and evaluations, having an advanced degree (Masters or PhD) in the subject matter, being an Associate or Fellow of the CAS or the SOA, and passing the corresponding professional actuarial examination.	• The classes substantially covering the learning objectives for SOA Exam FM/CAS Exam 2, SOA Exam M/CAS Exam 3 and SOA Exam C/CAS Exam 4 are taught by instructors with appropriate qualifications, as attested to by a designated full-time faculty member who is a member of the CAS or the SOA (SOA), or by the external actuarial advisory group. Qualifications to be considered may include past teaching experience and evaluations, having an advanced degree (Masters or PhD) in the subject matter, being an Associate or Fellow of the CAS or the SOA, and passing the corresponding professional actuarial examination.
3. Nature and quality of connection to the actuarial profession	• There is a designated full-time faculty member who is a member or correspondent member of the CAS or the SOA, and is responsible for maintaining current knowledge of the actuarial profession and advising students regarding the actuarial profession and an actuarial career. • The graduates of the Program enhance the actuarial profession, as described in a brief written report provided by the Program; such descriptions might include: the number of students who have passed at least one actuarial exam at time of graduation; the number of students going on to actuarial science related graduate school; alumni who become members of the CAS or SOA; and feedback from alumni.	• There is a designated full-time faculty member who is a member or correspondent member of the CAS or the SOA, and is responsible for maintaining current knowledge of the actuarial profession and advising students regarding the actuarial profession and an actuarial career. • The graduates of the Program enhance the actuarial profession, as described in a brief written report provided by the Program; such descriptions might include: number of students who have passed at least one actuarial exam at time of graduation; number of students going on to actuarial science related graduate school; alumni who become members of the CAS or SOA; and feedback from alumni. • There are activities that inform students about the practical and professional aspects of a career as an actuary. • The Program has an external actuarial advisory group, normally with a majority being members of the CAS, CIA or SOA; the group provides input to the Program regarding issues of importance to the actuarial profession and actuarial practice.

TABLE II: ACADEMIC ACTUARIAL SCIENCE PROGRAMS DESIGNATED BY THE SOCIETY OF ACTUARIES AS "ACCREDITED ACTUARIAL *RESEARCH* INSTITUTIONS" *(All accredited programs are located in an administrative unit accredited by the appropriate academic accreditation organization)*		
CRITERION	**Research Activity**	**Research Activity and Advanced Graduate Studies**
1. Nature and quality of actuarial science-related research	• One or more full-time faculty members and Bachelors or Masters students are actively involved in research relevant to actuarial science. • The research activity of the students enhances the actuarial profession, as described in a brief written report provided by the Program. • The research activity of the faculty enhances the actuarial profession, as described in a brief written report provided by the Program; such descriptions might include the topics and publication outlets of articles or papers published in the last three years; the topic and journal of articles or papers published in refereed journals in the last three years; and research seminars or workshops sponsored in the last three years.	• One or more full-time faculty members and Masters or PhD students are actively involved in research relevant to actuarial science. • The research activity of faculty enhances the actuarial profession, as described in a brief written report provided by the Program; such descriptions might include the topics and publication outlet of articles or papers published in the last three years; the topic and journal of articles or papers published in refereed journals in the last three years; and research seminars or workshops sponsored in the last three years.
2. Advanced graduate studies for actuarial science students		• Offers a Masters in actuarial science for students with an undergraduate degree in actuarial science, or a PhD degree for students with an undergraduate or Masters degree in actuarial science; the PhD degree may be in actuarial science or a related discipline such as finance, economics, mathematics, or statistics. • There is at least one graduate in the preceding three full academic years with a thesis topic relevant to actuarial science. • The Masters or PhD graduates of the Program enhance the actuarial profession, as described in a brief written report provided by the Program; such descriptions might include: the number of PhD graduates who have taken actuarial academic positions in the last five years; the number of PhD graduates who have also become members of the CAS or SOA in the last five years; the number of Masters graduates who subsequently obtained a PhD in the last 10 years; the number of Masters graduates who have also become members of the CAS or SOA in the last five years; and the topics and journals of publications by Masters or PhD graduates in the five years immediately after graduation.

The resulting possible accreditation designations are:

1. “Accredited Pre-Actuarial *Education* Institution”
2. “Accredited Actuarial *Education* Institution”
3. “Accredited Actuarial *Research* Institution – Research Activity”
4. “Accredited Actuarial *Research* Institution – Research Activity and Advanced Graduate Studies”

Although an institution would be accredited in only one education classification, it may be accredited in both research classifications.

Structure for Administering the System

The Task Force recommends that an Actuarial Science Program Accreditation Administration Committee be created to administer the accreditation system. The Task Force recommends that the Committee include SOA members, both academic and non-academic, and SOA staff.

The following section identifies the procedures that the Committee will have the responsibility to implement.

Procedures

Table III summarizes the verification and evaluation procedures suggested for each criterion.

TABLE III: Summary of Verification and Evaluation Procedures

Criterion	Verification and Evaluation Procedure	
	If information is NOT available on a website	**If information is available on a website**
Administrative unit accredited as baccalaureate or graduate educational institution	Statement from contact person identifying date of last academic accreditation review, the accreditation agency and the outcome of the review; SOA staff member verifies	SOA staff member verifies from website
Curriculum: Courses (other than VEE-approved courses)	For courses that substantially cover the learning objectives for Exams P, FM, M, CAS Exam 3, and C: Submission of the catalog description and a recent course syllabus for each course (if more than one section, need to submit only a syllabus for a typical section); volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted
Curriculum: VEE-approved courses	SOA staff verifies internally	
Curriculum: Evidence that communication skills are addressed	Statement from designated full-time faculty member who is member or correspondent member of the CAS or the SOA regarding how communication skills are addressed; volunteer member of Accreditation Committee evaluates submission	

TABLE III (Continued)		
Criterion	**Verification and Evaluation Procedure**	
	If information is NOT available on a website	**If information is available on a website**
Curriculum: Organized actuarial program	Submission of catalog description or other document describing the organized actuarial program; volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website and evaluates
Faculty – Qualified instructors	Statement from designated person or external actuarial advisory group identifying the instructors for each course, and attesting to their academic and professional credentials; SOA staff or a volunteer member of the Accreditation Committee check website or follow up with submitter as deemed necessary	
Connection to the profession – Designated full-time faculty member responsible for current profession knowledge and advising students re actuarial profession and actuarial career	Given name from general information submitted, SOA staff verifies using actuarial memberships database or contact with CAS	
Connection to the profession – Graduates enhance the profession	Statement from contact person describing how the graduates enhance the actuarial profession; items that might be included in such a description are noted in Table I; volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted
Connection to the profession – Activities that inform re practical and professional aspects of actuarial career	Statement from designated full-time faculty member who is member or correspondent member of the CAS or the SOA describing activities in the last three academic years that inform students about the practical and professional aspects of a career as an actuary; volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted

TABLE III (Continued)		
Criterion	**Verification and Evaluation Procedure**	
	If information is NOT available on a website	**If information is available on a website**
Connection to the profession – External actuarial advisory group	Submission of list of members and their actuarial affiliations; SOA staff verifies	
Research - Activity	Submission of list of faculty and students, including the school year of students, and a list of a sample of their papers (e.g. undergraduate honors theses or papers required for their major; working papers) and publications in the last three academic years Submission of description of other research activity such as seminars or workshops (e.g. hosting the Actuarial Research Conference) in the last three academic years Volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted
Research – Advanced Graduate Studies	Submission of catalog description or other document describing the Masters or PhD program, and the catalog description of the Masters or PhD courses; volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted
Research – Masters or PhD Graduates	Statement from contact person identifying Masters or PhD graduates in the last three academic years, and describing how those graduates enhance the actuarial profession; volunteer member of Accreditation Committee evaluates submission	Volunteer member of Accreditation Committee checks website for what is available on the website and evaluates, and also evaluates what is submitted

It is hoped that the existence of appropriate websites and email can make the application process less time-consuming for the institution, and the application review process more efficient for SOA staff and the Accreditation Committee. A sample application form is included in Appendix D.

As soon as possible after the review is complete, SOA staff prepares and distributes to the contact person a form that provides the results of the review of the application materials.

Fees

THIS SECTION IS TO BE COMPLETED AFTER THE TASK FORCE HAS RECEIVED RESPONSES TO ITS SURVEY. THE FOLLOWING SUMMARIZES THE TASK FORCE'S DISCUSSION OF FEES TO DATE

The first draft of this section included a fee structure based on the philosophy that:

a. the fee should be nominal;
b. there should be different fees for each accreditation classification; and
c. an actuarial science program would pay a fee for each classification for which they apply.

The level of fees in the draft fee structure was somewhat arbitrary, given limited information upon which to determine the expected costs of an accreditation system, the number of schools that would participate (which could be affected by the level of the fees), and an appropriate sharing of the costs. The Task Force concluded that it was best to first obtain feedback on alternative fee structures.

The purpose of the fee charge is to satisfy the principle articulated by the SOA Task Force on Academic Infrastructure that "The total cost to implement and administer the process should be proportionate to the benefit obtained, and should be shared between SOA and the affected schools." This principle addresses a concern that an accreditation system could be costly to implement and maintain, and that the Board of Governors, recognizing current budget limitations, is reluctant to approve a project unless there is offsetting revenue being generated.

On the part of the schools, which will bear the initial burden of collecting all of the required information, the issue of fees may be seen as a particularly unpleasant and unwarranted part of a system in which they may not even be interested in participating.

There are at least three options for a fee structure:

OPTION ONE:

1. For the first round of accreditation, charge no fees.
    a. Since we do not know the costs to the SOA of running this process, any fee is bound to be arbitrary.
    b. With a significant burden on the participating schools to collect the requested data, there is already a major cost involved for them – an additional cost, at a time the SOA is declaring how important academic institutions are to achieving its future mission, may be prohibitive.
    c. If the SOA truly believes in an accreditation system, the Board ought to be willing to support it and pay for its full cost.

OPTION TWO:

2. For the first round, all costs involved should be charged back to the schools seeking accreditation.
    a. Accreditation will provide significant benefits to the schools and they should be prepared to pay for them.
    b. At this stage of the SOA budgeting process, there are no operating funds for a new, potentially costly venture.
    c. Bills for the fees can be sent out after the accreditation process has been completed and the full costs determined. An initial assessment (a 'best guess') could be paid at the start of the process with the remainder paid at the completion.

OPTION THREE:

3. Use an arbitrary set of fees for the first round.
    a. It is unlikely that anyone can accurately cost the implementation expenses in advance without an extensive study, and an arbitrary set of fees is better than none.
    b. With an initial payment, the schools will be accustomed to budgeting for the privilege of being accredited. Future costs can be more fairly determined and fees adjusted after the initial costs are accumulated.
    c. It will be easier to adjust fees in the future as compared to imposing fees for the first time.
    d. Some fee income will flow into the Treasury of the SOA and will offset these new expenses, which may alleviate any financial concerns the Board may have.

Effective Date and Pilot Test (TO BE COMPLETED AFTER FEEDBACK REVIEWED)

The Task Force recommends that the accreditation program be implemented so that the first listing of accredited programs is published no later than **TBD**. The Task Force recommends that a pilot test of the procedures, with a reduced fee as determined by the Accreditation Administration Committee, be conducted during **TBD**. The pilot test should include schools from each of the categories in the current listings of academic actuarial science programs.

V. SOA PROJECT EVALUATION: VALUE AND NECESSARY RESOURCES (*TO BE COMPLETED AFTER FEEDBACK REVIEWED*)

The Board's action in October 2004 confirmed that a program of accreditation of academic actuarial science programs had value to the SOA. However, little evaluation of the value relative to the cost of the necessary resources for schools to apply, or for the SOA to administer, or relative to other initiatives, was possible at that time.

The necessary resources for schools to apply include faculty or staff time and an application fee. The necessary resources for the SOA to administer are primarily conference calls and meetings, and volunteer and staff time[2]. The Task Force believes, based in part on the experience of the VEE committee, that the recommended accreditation program would require **TBD** to facilitate the appropriate initial and subsequent reviews, and to maintain the list of accredited schools.

In an attempt to assess the relative value of a program of accreditation, the Task Force members completed the SOA project evaluation template, both before and after **(TO BE COMPLETED)** they designed the recommended accreditation program. The results are summarized in Tables V and VI (The numbers in parentheses are the equivalent unweighted numbers.) In addition, the Task Force

[2] Cost of paper and overhead should be minimal

made its draft report available online, along with a survey to elicit feedback. With respect to the relative value, the survey yielded the following results **(TBD)**

Appendix E is a copy of the template.

TABLE IV: Project Evaluation: BEFORE (n=11)							
	Member Value (40%)	Volunteer Requirements (15%)	Annual Budget Effect & NPV Margin (15%)	Time & Complexity (5%)	Interdependence on Others (5%)	Project Risk (20%)	TOTAL
Mean	1.09 (2.73)	0.63 (4.20)	0.46 (3.07)	0.14 (2.80)	0.11 (2.20)	0.52 (2.60)	2.95
Standard Deviation	0.31	0.11	0.17	0.06	0.04	0.21	0.44
Minimum	0.40 (1)	0.45 (3)	0.30 (2)	0.05 (1)	0.05 (1)	0.20 (1)	2.45
Maximum	1.60 (4)	0.75 (5)	0.75 (5)	0.25 (5)	0.20 (4)	0.80 (4)	3.95

TABLE V: Project Evaluation: AFTER (n=??)							
	Member Value (40%)	Volunteer Requirements (15%)	Annual Budget Effect & NPV Margin (15%)	Time & Complexity (5%)	Interdependence on Others (5%)	Project Risk (20%)	TOTAL
Mean							
Standard Deviation							
Minimum							
Maximum							

Although the Task Force is not in a position to evaluate the Project Evaluation scores relative to scores for other SOA projects, the Task Force believes the scores reflect a reasonable resource cost versus benefit relationship.

VI. CONCLUSIONS AND SUMMARY OF TASK FORCE RECOMMENDATIONS (*TO BE COMPLETED AFTER FEEDBACK REVIEWED*)

VII. APPENDICES

APPENDIX A

Objectives of a partnership from "*A Partnership Between The Academic Community And The Actuarial Profession*, White Paper – For Review And Comment, March 2000, Joint CAS, CIA, SOA Task Force on Academic Relations, Discussion Draft, October 1999"

The Task Force has identified the following objectives of a partnership between the actuarial profession and the academic community, with the understanding that the actuarial profession must retain ultimate responsibility and accountability for the professional qualification of its members.

1. **To produce a sufficient number of highly qualified students and employees.**

   The product of the education function of the academic community (students) must be consistent with the skills needed to fulfill the mission and vision of the actuarial profession. Individuals who can be successful and are desired by employers must be attracted to the profession.

2. **To produce a sufficient amount of theoretically sound and practical research.**

   The product of the research function of the academic community (ideas), developed in partnership with the actuarial profession, must contribute to the advancement of actuarial science and actuarial practice. The research function of the academic community must advance both theory and application and serve the needs of those who can benefit from actuarial analysis.

3. **To enhance the reputation of actuarial science within the academic community.**

   As the reputation of actuarial science as an academic discipline is enhanced, actuarial science related curriculum and research activities will receive more attention and resources from within the academic community, which will contribute to the success of the actuarial science education and research functions.

4. **To enhance the reputation of the academic community within the actuarial profession, the business community and government.**

   As the reputation of the academic community within the business community and government is enhanced, there will be greater opportunity for cooperative and mutually beneficial efforts that will benefit both actuarial practice and actuarial science.

5. **To enhance public recognition of the profession.**

   The independent, objective thinking promoted in an academic community and a faculty knowledgeable about actuarial science and actuarial issues enhance public recognition of the expertise of the profession. Research, education and comment on public policy issues to which actuarial analysis can add value needs to be supported by academia.

APPENDIX A (continued)

Objectives of a partnership from "*A Partnership Between The Academic Community And The Actuarial Profession*, White Paper – For Review And Comment, March 2000, Joint CAS, CIA, SOA Task Force on Academic Relations, Discussion Draft, October 1999"

6. **To optimize the use of the combined resources of both the academic community and the actuarial profession.**

   It is important to balance the use of members of both the academic community and the actuarial profession between where they are best qualified and where they can most benefit from interaction with each other. The academic community is an under-utilized resource with regard to the actuarial profession while practitioners may be better utilized in providing support to other volunteer areas.

   Academics need and want a better understanding of "real world" problems and access to practitioners to work with in solving such problems. Practitioners want to understand better how to apply research and the link between the tools academics can provide and the problems to be solved.

7. **To maintain a flexible and dynamic basic and continuing education system.**

   It is essential to maintain a basic education system and a continuing education system that can quickly respond to advances in actuarial science, in actuarial practice, or in educational methods, and to the changing environments in which actuaries work.

   These objectives need to be coordinated and consistent with changes in the education processes of the CAS and the SOA.

8. **To support consistency of the relationship between the actuarial profession and the academic community throughout the world.**

   As more and more employers of actuaries conduct business in more than one country, it is important for employers to be able to easily identify those individuals who are qualified to work as actuaries, regardless of geographic location. Consistency of the relationship of the actuarial profession and the academic community will expedite the task of identifying such individuals.

APPENDIX B

Recruiting Task Force Members and Interested Parties

Warren Luckner, as the SOA Board member responsible for relations with the academic community, was charged with the responsibility of recruiting individuals to serve on the Task Force, subject to confirmation by SOA President Steve Kellison.

Recruiting efforts included solicitation of representatives from:

1. the SOA Education and Research Section;
2. the Joint CIA, CAS, SOA Committee on Academic Relations;
3. the Joint CAS, CIA, SOA Task Force on Academic Relations (also known as the Radcliffe Task Force);
4. the Task Force on Academic Infrastructure (also known as the London Task Force);
5. the CAS;
6. the various areas of practice; and
7. the various classifications of programs (introductory undergraduate, advanced undergraduate, graduate-education, and graduate-education and research) in the current listings of colleges and universities offering actuarial science programs.

In addition, a solicitation of interest was distributed via the Academic Relations listserve.

APPENDIX C

Components of process to develop rules, structure and procedure

The process used to develop the rules, structure and procedures for an accreditation system included the following components:

1. Review of background material, including:
   a. "Report to the Society of Actuaries Board of Governors from the Task Force on Academic Infrastructure, October 23-24, 2004";
   b. "*A Partnership Between The Academic Community And The Actuarial Profession*, White Paper – For Review And Comment, March 2000, Joint CAS, CIA, SOA Task Force on Academic Relations, Discussion Draft, October 1999";
   c. Categorization criteria for the "2004 Actuarial College Listings";
   d. Institute of Actuaries in Australia University Accreditation Policy And Criteria;
   e. Document summarizing the general basis for academic accreditation and the professional certification of actuaries in Mexico
   f. International Actuarial Association (IAA) Education Guidelines and Education Syllabus;
   g. Chapter 6, Education and CPD, (17 pages) from the "Morris Review of the Actuarial Profession, Interim Assessment Report, December 2004"; and
   h. Comments from several actuarial faculty members prior to the first Task Force conference call.
2. Task Force members providing their top three criteria upon which a system of accreditation of academic actuarial science programs should be based.
3. Discussion during conference calls, meetings and via email.
4. Discussion with accounting professors, including the chair of the School of Accountancy at the University of Nebraska – Lincoln, which is preparing for an accreditation review by the Association to Advance Collegiate Schools of Business (AACSB) during the 2005-2006 academic year.
5. Presentation and discussion at the June 2005 meeting of the SOA Board of Governors
6. Presentation and discussion at the August 2005 Actuarial Research Conference
7. Posting of a draft of the objectives, criteria, structure and procedures on actuarial websites, with email notification of the posting to:
   a. SOA Board members
   b. contacts at schools on the current Actuarial College Listings;
   c. actuarial employer contacts from the Actuarial Training Programs directory
   d. individuals on the Academic Relations Listserve;
   e. members of the SOA's Education and Research section;
   f. CAS academic correspondent members; and
   g. members of the Alternate Route Further Study Task Force.
8. Making revisions in response to feedback.

APPENDIX D

SAMPLE APPLICATION FORM: Academic Actuarial Science Program Accreditation

Please Note:

1. There is a fee for accreditation by the Society of Actuaries.
2. Some information about your program will be directly verified by the SOA. By applying for accreditation you are granting the SOA permission to verify information called for in this application process.
3. Please provide web-links when possible.

PLEASE SUBMIT THE FOLLOWING ELECTRONICALLY.

I. General Information.

Institution Name: _____

Address(es): _____

Phone Number(s): _____

FAX Number(s): _____

Most relevant web pages: _____

Accrediting Organization: _____
(for university, college, school or faculty-whichever is most relevant)

Date of Most Recent Accreditation: _____

Level at which actuarial science courses are offered:

___ Undergraduate only ___ Undergraduate and Graduate ___ Graduate only

The category or categories of accreditation for which you are applying: Circle all that apply

Pre-actuarial *Actuarial* *Research Activity*

Research Activity and Advanced Graduate Studies

Name of the contact person for the actuarial program:

_____ Email _____

Name and actuarial credentials of the faculty person responsible for maintaining current knowledge of the actuarial profession and advising students regarding the actuarial profession and an actuarial career. (May be same as above).

_____ Email _____

Name and actuarial credentials of the person(s) responsible for attesting to the academic and professional qualifications of faculty teaching actuarial courses. (May be same as above).

_____ Email _____

APPENDIX D (continued)

II. Curriculum: The Accreditation Committee is particularly interested in courses in your curriculum related to the professional credentialing process.

For the Pre-actuarial category those are courses that substantially cover the learning objectives for the CAS/SOA Probability (P) Exam and the CAS/SOA Financial Mathematics (FM) Exam.

For the Actuarial category those are courses that substantially cover the learning objectives for CAS Exam 3, SOA Exam M, and CAS/SOA Exam C. Submit only for those courses for which a significant part of the content involves the learning objectives.

A. Please submit a description of the structure of your actuarial curriculum (administrative location, culminating degree(s), degree requirements). The description could be catalog copy or a separate document. If you have an appropriate document posted, provide a web link.

B. For each such course in your curriculum please supply the following information (please provide web-links, or submit electronically, in place of paper documents when possible).

    1. Catalog description. Web link: _____
    2. A recent and representative syllabus. Web link: _____

C. Identify by course, the teachers and their credentials (advanced degree(s), actuarial credentials, actuarial exams passed, or other relevant information), for courses directly related to SOA Courses FM, M and C, and CAS Exam 3.

D. You must offer the appropriate VEE courses (one for the pre-actuarial category, and all three for the actuarial category) and they must have been approved by the SOA. This information will be verified by the SOA.

APPENDIX D (continued)

III. Program Description: Please provide statements on each of the following elements in your actuarial program. One well constructed paragraph for each is sufficient, more than two or three paragraphs on any element is too much.

If you have an appropriate statement posted, provide a web link; otherwise please submit these statements within this document when it is submitted electronically.

A. Describe the mission of your actuarial science program. (We would like to know your thoughts on the purpose and goals of your program, who it serves and what are you trying to accomplish).

B. Communication skills are a major concern of the SOA. Please describe how students develop communication skills at your institution.

C. Describe the connection to the actuarial profession of your faculty and other people directly involved with your program. Of particular interest is how personnel maintain current and accurate information about the actuarial profession.

D. Describe student success. Do your students pass actuarial exams while in school? Do they have internship experiences? Do your alumni enter the actuarial profession? Continue with the credentialing process? Become credentialed? Become leaders in the profession? Detailed statistics are not expected, but supporting data is welcome (e.g. the number of students who have passed at least one actuarial exam at time of graduation; the number of students going on to actuarial science related graduate school; alumni who become members of the CAS or SOA; and feedback from alumni).

E. Describe activities that connect your students to the profession. Provide a description or a list of activities available to your students enabling them to learn about the actuarial profession, career expectations and opportunities, and professional development.

F. If your program has an external actuarial advisory group, list the members and any actuarial credentials they have. Describe how the advisory group provides input to the program regarding issues of importance to the actuarial profession and actuarial practice. An external actuarial advisory group is required for the Actuarial category.

APPENDIX D (continued)

COMPLETE THE FOLLOWING SECTION ONLY IF YOU ARE APPLYING FOR ONE OF THE RESEARCH ACCREDITATION CATEGORIES.

IV. Research: Please provide statements on each of the following elements in your actuarial program. One well constructed paragraph for each is sufficient, more than two or three paragraphs on any element is too much.

If you have an appropriate statement posted, provide a web link; otherwise please submit these statements within this document when it is submitted electronically.

A. If undergraduate students are active in research, provide a list of such students and describe their research activities that are relevant to actuarial science; such descriptions could include a list of topics of papers to which they contributed, honor theses topics or topics of papers required for their major, or a list of topics of presentations at undergraduate research conferences or workshops

B. Describe research activity such as seminars, conferences (e.g. Actuarial Research Conference), or workshops that your institution hosted in the last three academic years.

C. If your program has a Masters or PhD degree for students with an undergraduate degree in actuarial science (may be in actuarial science or a related discipline such as finance, economics, mathematics, or statistics), provide the catalog description or other document that describes the Masters or PhD program, and the catalog description of the Masters or PhD courses. Identify the thesis topics of Masters or PhD graduates in the last three academic years.

D. Describe how Masters or PhD graduates of the program enhance the actuarial profession; such description might include: the number of PhD graduates who have taken actuarial academic positions in the last five years; the number of PhD graduates who have also become members of the CAS or SOA in the last five years; the number of Masters graduates who subsequently obtained a PhD in the last 10 years; the number of Masters graduates who have also become members of the CAS or SOA in the last five years; and the topics and journals of publications by Masters or PhD graduates in the five years after graduation.

E. Describe how the research activity of the faculty enhances the actuarial profession; such descriptions might include a sample of the topics and publication outlet of articles or papers published in the last three years; and a sample of the topics and journal of articles or papers published in refereed journals in the last three years.

APPENDIX E

SOA Project Evaluation Template

	Criteria	Wt (%)	Definition/Categories	Wted Score	Scores				
					1	2	3	4	5
BSC Strategy	Member Value	40	The Member Value category ranks the activity according to whether it is a required activity, a **core activity**, (i.e., E&E, CE or Research) or a **support activity** (services to members). Evaluation of the project based on its placement on the SOA Strategy Map.		Critical to member satisfaction	Core activity with value to all members.	Support activity with value to all members.	Core activity with value to a subset of members.	Support activity with value to a subset of members.
Member	Volunteer Requirements	15	The Volunteer Requirements category ranks the activity by the volunteer effort required. Projected volunteer hours necessary to implement the project and sustain the activities.		Will reduce volunteer hours for existing committee or task force.	No change required to existing committee or task force.	Temporary increase in existing committee or task force workload.	Permanent increase in existing committee or task force workload.	New task force or committee needed to implement.
Financial	Annual Budget Effect and NPV Margin	15	Implementation and year-by-year costs of the program (includes estimated salary-related costs, based on projected staff hours required to implement). The annual budget effect measures the cost in a given year, while the NPV measures costs over a 5 year budget cycle.		Generates marginal revenues in excess of costs.	Self-supporting.	Annual budget effect <$50K and NPV< $250K.	Annual budget effect up to $200K or NPV up to $1MM.	Annual budget effect over $200K or NPV over $1MM.
Implementation	Time & Complexity	5	Expected time and complexity of the project implementation.		Not complex and easily implemented in the short term.	Some project management needed. Implemented in one year or less.	Some project management needed. Multi-year project.	Highly complex with significant project management needed. Implemented in one year or less	Highly complex with significant project management needed. Multi-year project.
	Interdependence on Others	5	Involvement of other (organizations) in the project implementation. Degree of reliance on other organizations for success.		No involvement or reliance.	SOA is lead organization; coordination with others needed.	SOA is lead organization; high reliance on others.	SOA is not lead organization; coordination with others needed.	SOA is not lead organization; high reliance on others.
Risk	Project Risk	20	Risks associated with implementation of the program. Threats or loss of opportunities should the decision be made not to proceed with or to defer the project.		Low project risk; high risk of not doing or deferring.	Low project risk; low risk of not doing or deferring.	Moderate project risk; high risk of not doing or deferring.	Moderate project risk; low risk of not doing or deferring.	High project risk; low risk of not doing or deferring.