



ACM Education Board Annual Report Fiscal Year FY 99

9/7/99

Membership of the Board 1998-99

Chair	Peter Denning
Vice-Chair	Richard LeBlanc
	Robert Aiken
	Lillian (Boots) Cassel
	Gordon Davies
	Jenny House
	Marvin Israel
	Eric Roberts
Headquarters Liaison	Fred Aronson

Standing Committees:

Accreditation	John Impagliazzo
College Education	Russell Schackelford
Pre-College Education	Robert Cartright
Professional Development	[vacant]
Self Assessment	[vacant]
Two-Year College Curriculum	Karl Klee

Task Forces:

Computer Information Systems	John Gorgone
	Gordon Davis
K-12 Task Force	Jenny House

Representatives:

Computer Science Accreditation Board (CSAB)
Directors

[Robert Cannon](#)
[Della Bonnette](#)
[Kenneth Martin](#)
[Neal Coulter](#)
[Joyce Currie](#)
[Little](#)
[Jan B. Wilson](#)

Institute for Certification of Computer Professionals
(ICCP) Directors

Strategic Planning

The ACM has been called on to respond in new ways to the education needs of the Information Technology Profession (ITP). It is no longer sufficient for ACM to propose periodic improvements to computer science, information science, two-year college, and pre-college curriculum recommendations. Many people now look to ACM for US and international leadership in K-12 (pre-college) education, professional education, certification of basic IT skills, certification of professional skills, and self-assessment. Accordingly, the Ed Board prepared an Education Strategic Plan to guide ACM in education for the next several years. The Education Strategic Plan was a component of a larger strategic plan for the ACM ITPI (Information Technology Profession Initiative). The ACM Executive Committee and Council approved the ITPI and accepted the Education plan on May 16, 1999. The main points of the Education Plan are summarized in Table 1.

The Board understands that it will need to rely on external funding for many of the projects defined in Table 1. Although this plan is strongly influenced by experience in the USA, the Board is well aware that the concerns and issues raised transcend national boundaries. The Board intends to work with international groups on these projects.

Budgeting and Staff Support

The Board worked with the Executive Committee to develop an annual budget that enables action on the strategic plan. This rectified a problem in which there was no official Ed Board budget for two years.

In addition to the budget, CEO John White agreed to hire an Education Director. Denning worked with COO Pat Ryan and interim Education Director Fred Aronson to prepare a job description. Candidates were being sought in August 1999 and the position should be filled late Fall 1999.

TABLE 1: Summary of Education Strategic Plan

	Grand Challenge	Proposed Ed Strategic Directions
A	How to interest qualified, talented students to go into the IT field or extend their interest in other fields to include IT.	<ul style="list-style-type: none"> Advanced Placement: AP Test for Computing (work closely with ETS) Pre-college program recommendations (work closely with ACM K12 committee). Stimulate greater interest among women for

		IT careers (work with ACM Women & Minorities committee.)
B	How can higher education satisfy the needs of industry and government for IT innovation, IT professionals, and high-level computing capabilities in other fields.	<ul style="list-style-type: none"> • Faculty retention: Major study to find a permanent solution to the "seed corn" problem. • Curriculum recommendations for colleges and universities(CS core 2001, IS, two-year colleges). • Academic-corporate university partnerships: Major effort to encourage partnerships between corporate education and higher education (e.g., accrediting partnership programs); work with accreditation groups (e.g., CSAB) and corporate universities (e.g., CorpUX). • Encouraging professional mastery: Define the role of practices and mastery in the IT specialties and recommend curricula (starts as white paper project). • Pathways to specialties: Recommend new ways for educators to accommodate the many pathways to professional specialties (starts as white paper project). • Supply of IT workers: Work with CRA to implement recommendations of the Freeman-Aspray report.
C	How can IT and other professionals maintain a current level of knowledge of IT and maintain certification where appropriate.	<ul style="list-style-type: none"> • Certifications for the public: Establish ICDL; investigate other industry-specific certifications of similar value such as Microsoft MOUS, Cisco, A+, or Virginia's web-skills test. • Professional updating: Establish PKP/PUP program. • Professional knowledge broker: Become a broker for people who want to find continuing education programs; endorse high-quality programs.
D	How can IT professionals present IT as an attractive field for a career choice and establish public appreciation of the importance and benefits of IT.	<ul style="list-style-type: none"> • Core identity: Articulate and maintain a lucid exposition of the core science of the IT profession, showing clearly how each specialty fits in. • Cross-discipline communication: Establish project to understand different world-views and vocabularies of communication in the participating specialties. • Model Programs: Locate, endorse, encourage, and disseminate best practice.

Projects

Following are summaries of the projects active in 1999; their headlines appear in the table above. They are cross-indexed to the main tracks in which they appear (A, B, C, and D).

A-1. Advanced Placement

The current AP test is not accepted by many undergraduate programs: many students have taken an AP course and passed the test do not get college credit toward their ma degree. Cartright contacted the Educational Testing Service (ETS) to propose helping them design an better Advanced Placement test in computing. The ETS formed a committee to review the test and recommend improvements; ACM is represented.

A-2. Pre-College Program Recommendations

The ACM K-12 Task Force (chaired by House) met for the first time in early summer brainstorm areas of action where it could contribute to improving K-12 education in science, mathematics, and computing. The committee has offered to the US Dept of Education to host the virtual hearings of the Glenn Commission that will make recommendations on this by 2001.

B-1. Faculty Retention (The Seed-Corn Problem)

One of the side effects of the shortage of IT workers is that companies offering high salaries and excellent lab facilities are attracting faculty and graduate students from universities, making it difficult or impossible to staff up to meet the demand for more workers. The Board is deferring action until the ITP Initiative Steering Committee announces its plans for assisting universities.

B-2. Curriculum Recommendations

ACM has long been a leader in developing, disseminating, implementing and evaluating model curricula. These projects were underway in 1999:

Software Engineering (LeBlanc): working with IEEE/CS, ACM proposed accreditation criteria and curriculum recommendations for accredited software engineering programs

Computer Science (Roberts, Shackelford): ACM has teamed with IEEE/CS to create Curriculum 2001, a major revision to Curriculum 91. The working group met twice during spring and summer. It prepared a draft set of core topics and principles in summer 99, to be released for public comment in fall 99. The group has a schedule to deliver its final curriculum recommendation in fall 2000, and is on track.

Information Science (Gorgone):

1. In partnership with Association for Information Systems (AIS), ACM developed and released draft of MSIS 2000, and is on track toward scheduled release next year.
2. Teaming with AIS and Association of Information Technology Professionals (AITP), ACM created a revision to IS '97, the model curriculum and guidelines

undergraduates. The IS '2000 recommendation is on track for scheduled delivery next year.

3. With NSF support, ACM has teamed with AIS, IEEE-CS, CSAB, and industry representatives to develop a set of criteria for accrediting IS programs.
4. ACM is embarking on a project with AIS to develop a four-course IS concentration for MBA programs, including the first overview IS course required of all MBA programs.

Two-Year Colleges (Klee): With a SIG Board grant, the committee sponsored a major revision to the 1993 ACM curriculum on computer support services, entitled *Guidelines for Associate-Degree Programs to Support Computing in a Networked Environment*. Revised guidelines were drafted by a 14-member task force of two-year college and industry personnel, who worked from June 1998 until the present time. The draft was reviewed several times by college, business, and industry volunteers. The guidelines are scheduled for approval by the Education Board in October 1999.

IFIP (LeBlanc): IFIP WG 3.2 conducted a survey of people's views of the common core of Computer Science and Information Science. Several ACM people participated. The project was not strongly backed within IFIP and disbanded during summer 99.

Accreditation (Impagliazzo): In close cooperation with IEEE/CS, the Accreditation committee continues to work with CSAB to field accreditation visiting teams.

B-6. Supply of IT Workers

ACM people participated in and reviewed drafts of a CRA (Computing Research Association) report authored by Peter Freeman and Bill Aspray on the IT worker shortage in the US. The report was issued in spring 1999.

ACM offered to assist the NRC panel on IT workforce, formed in spring 1999. Dennis attended the panel's inaugural meeting as ACM representative.

C-1. Certifications for the Public

In Europe, CEPIS established a computer-literacy skills test called the European Computer Drivers License (ECDL). Some 45,000 people a month are taking the test. British Computer Society is readying to administer it in the UK. Fred Aronson with extensive input from the Board and the assistance of CEO John White, drafted a business plan for ACM to administer the exam in the US under the name International Computer Drivers License (ICDL). In summer 1999, the ECDL Board gave preliminary approval: ACM to be the US distributor.

C-2. Professional Updating

The Board believes it is vital that ACM help professionals assess their current levels of knowledge and improve themselves. Denning (with collaboration of Matt Bishop) produced a prototype Professional Update Program (in data security) and made it available on the ACM website in 1998-99. Transforming this into a service for members will be a high priority for the new Education Director.

D-1. Core Identity

In the 1960s and again in the 1980s, ACM articulated its visions of the core and structure of the discipline of computing. These articulations were very influential in building an identity for computer science and in helping structure curricula for computer science majors. It is now time to do a similar thing for the IT profession. The Board intends to contribute the ACM ITP initiative's Core Identity Project to articulate and maintain a lucid exposition of the structure of the IT field and its core science. The Board will encourage and cooperate with projects to communicate the structure and core science to people in other fields and to the public.

D-2. Cross-Discipline Communication

The goal of bridging between different specialties is not easy to meet because the specialties have their own world-views, language, and vocabulary to describe themselves and what they do. Boots Cassel has defined a project to address this issue.

Major Actions

August, 1998:

- IS'97 Curriculum distributed at Americas IS Conference (Gorgone)
- Americas IS Conference comments on draft MSIS Curr (Gorgone)
- First draft of computer support curriculum guidelines (Klee)

October 1998:

- Participate in IFIP WG 3.2 survey (LeBlanc, Aiken)
- FY99 and FY00 budget requests (Denning, LeBlanc)
- Organize Curriculum 2001 Committee (Roberts)
- Board met to review projects and initiate strategic planning (Denning)
- Start drafting Ed Board strategic plan (Denning)
- Start gathering info about ECDL (Aronson)
- CSAB and ABET sign integration agreement (Cannon)
- Formal input from ACIS and ISECON on draft MSIS Curr (Gorgone)
- Second draft of computer support curriculum guidelines (Klee)

November 1998:

- Formal input from INFORMS-CIS, Decision Sciences Institute, and Conference Board on draft MSIS Curr (Gorgone)

December 1998:

Preliminary EC approval of FY99 budget increases (Denning)
Agree to organize Curr 2001 panel at SIGCSE (Roberts)
Initial ACM appointments to Curr 2001 working group (Roberts, Shackelford)
Preliminary report on ECDL (Aronson)
Agree to join AIS and AITP to update IS'97 to IS'2000 (Gorgone)
International Conference on IS receives IS'97 Curriculum and provides formal comm
on draft MSIS Curr (Gorgone)

January 1999:

Board approves drafting of ICDL business plan (Aronson)
Curr 2001 committee fully formed and into operation (Roberts)
Board comments on draft strategic plan (Denning)
Software engineering task force formed with SWECC (LeBlanc)
Establish procedure to update IS'97 on web (www.IS2000.org) (Gorgone)
Int'l Conf on Systems Sciences comments on draft MSIS Curr (Gorgone)
IS Accreditation develops "strawman" IS criteria (Gorgone)

February 1999:

EC approves FY99 budget increase (Denning)
EC approves HQ education director (Denning)
SWE Blue Ribbon Panel requests Ed Board input (Denning)
Organize meeting EdBoard + ETS to discuss AP at SIGCSE (Cartright)
Discussion of ICDL business plan draft (Aronson)
Third draft of computer support curriculum guidelines (Klee)

March 1999:

Board lunch meeting at SIGCSE 99 (Denning)
In depth Board review of draft strategic plan (Denning)
Curr 2001 presentation session at SIGCSE 99 (Roberts, Shackelford)
ACM SIGCSE comments on draft MSIS Curr and on
"strawman" IS criteria (Gorgone)
Two-year computer support curriculum presented at SIGCSE 99 (Klee)

April 1999:

Strategic Plan completed, approved by Board (Denning)
Discussion of ICDL business plan draft (Aronson)
Curr 2001 joint ACM/IEEE work group meeting (Roberts, Shackelford)
Meetings with SWE Blue Ribbon panel (Denning, LeBlanc)
FY00 budget requests formulated and sent to EC (Denning, LeBlanc)
IS Accreditation group meets to revise draft IS criteria (Gorgone)

May 1999:

Strategic plan submitted to EC and Council (Denning)
EC approves FY00 Ed Board budget, accepts plan (Denning)
Council approves ITP initiative (Denning)
Prospectus for IT Communication project (Cassel)
IS Accreditation criteria revised (Gorgone)
NSF proposal (\$45K) submitted for dissemination of two-year computer support curriculum (Klee)

June 1999:

Draft ICDL business plan ready for discussion with
ECDL Foundation (Aronson)
Job description for HQ education director completed (Aronson)
Curr 2001 joint ACM/IEEE meeting (Roberts, Shackelford)
Final draft MSIS report prepared (Gorgone)
Draft #4 of IS Accreditation criteria prepared and available on web site (Gorgone)
Draft IS Accreditation survey instrument prepared (Gorgone)

July 1999:

ACM hosts IFIP WG 3.2 (education) dinner (Turner)
Fourth draft of computer support curriculum guidelines (Klee)

August 1999:

J House, chair of K12 Task Force, joins Ed Board (Denning)
K12 committee sends "hosting virtual hearings" proposal to DoEd for Glenn Commis
(House)
Visit to ECDL Foundation (Aronson, White)
ECDL Foundation preliminary approval of ACM distributorship of ICDL in US
(Aronson)
Curr 2001 committee agrees on draft of core subject matter (Roberts)
ETS constitutes the AP review committee (Cartright)
Final draft MSIS report presented to AIS for comments (Gorgone)
Endorsements for MSIS report requested from major IS organizations
Draft IS Criteria presented for comments at Americas Conf. IS (Gorgone)

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Last Update: March 2, 2000 by [Patrick J. De Blasi](#)

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