V viewpoints

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Virtual Extension
The Need for a New Graduation Rite of Passage

A proposal for a new organization recognizing students graduating in the computer sciences as professionals with ethical responsibilities in service to society.

THE USE OF computers is pervasive throughout our society. Given the ever-increasing reliance placed upon software, graduates from computing-related degree programs need to be more aware than ever of their responsibilities toward ensuring that society is well served through their creative works. To assist with this effort, a new organization is being proposed for the establishment of a rite-of-passage ceremony for students graduating in the computing sciences that is similar in nature and scope to the Ring Ceremony employed by the Order of the Engineer for students graduating from engineering programs. This new organization is solely intended to promote and recognize the ethical and moral behavior in graduates of computing-related degree programs as they transition to careers of service to society. Two institutions—Ohio Northern University and the University of South Florida—have already experimented with this concept. We seek to start a larger conversation on this concept by soliciting
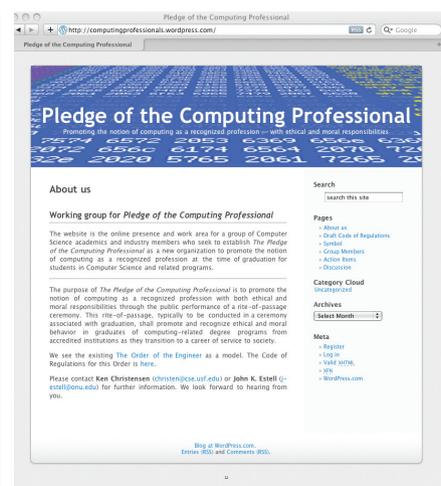
Web site for the Pledge of the Computing Professional.

input from the community on what we believe is a significant need for a new organization—an organization that can benefit both our graduates and the computing profession.

Motivation

Learned professions typically have a code of ethics or oath to which their members subscribe. Adoption of this code of ethics or oath may occur in a formal ceremony or as part of the graduation ceremony. For example, medical graduates have the Hippocratic Oath. Other professions incorporate a rite-of-passage ceremony, such as the capping ceremony for nurses, to provide appropriate symbolism for transitioning into one's chosen profession. Our U.S. engineering colleagues combine both elements through the Order of the Engineer,[6] which is based on the Canadian Calling of the Engineer.[5] As explained on the Order of the Engineer Web site: *"The Order of the Engineer was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer."*

We believe there is a similar need for students about to graduate from computing programs. ACM already has a code of ethics,[1] but this code is not formally adopted by graduates in any ceremony, nor does ACM have anything currently in place to ceremonially symbolize the transition from

student to professional. It should be noted that what is being proposed is fundamentally different from an honor society. Honor societies are, by their very nature, restrictive in their membership; for example, the computing sciences honorary Upsilon Pi Epsilon requires that undergraduate inductees must rank in the upper 35% of the class and possess a grade point average of at least 3.0 on a four-point scale.[7] The engineering honorary Tau Beta Pi has similar membership restrictions.[4] Conversely, the Order of the Engineer has no such restrictions—all graduating engineers are invited to participate in the induction ceremony. While there is a fee to cover the costs of the memorabilia associated with the ceremony, there are also no annual dues, no professional conferences, and no magazine sent to the members of the Order of the Engineer. As it is further stated on the Order of the Engineer Web site: *"The Order is not a membership organization; there are never any meetings to attend or dues to pay. Instead, the Order does foster a unity of purpose and the honoring of one's pledge lifelong."*

The proposal outlined here is *not* a call for accreditation, licensure, or certification at any level. It is also *not* a call for the formation of a new professional society along the lines and scale of established entities such as ACM or IEEE-CS. The proposed new organization would not be a membership organization; there would be no meetings, no conferences, and no annual dues. Its sole purpose would be to facilitate and promote a rite-of-passage ceremony where students take a pledge to affirm and uphold the ethical tenets of the profession they are about to enter. It is analogous to a squire, upon entering the knighthood, publically affirming an oath to act chivalrously when performing his knightly duties, thereby serving to openly emphasize the importance of the ethical responsibilities associated with the job.

To fully understand the rationale behind this proposal, some explanatory background is required. The Order of the Engineer provides both a standardized format for a rite-of-passage ceremony (the Ring Ceremony) for graduating engineering students and appropriate logistical support (for example, a place to order the certificates and steel rings

The Pledge of the Computing Professional

The symbol is a matrix with the word "Honor" encoded in ASCII. The symbol will be part of the memorabilia item presented to students in the new rite of passage.

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01001000
01101111
01101110
01101111
01110010
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I am a Computing Professional.

My work as a Computing Professional affects people's lives, both now and into the future.

As a result, I bear moral and ethical responsibilities to society.

As a Computing Professional, I pledge to practice my profession with the highest level of integrity and competence.

I shall always use my skills for the public good.

I shall be honest about my limitations, continuously seeking to improve my skills through life-long learning.

I shall engage only in honorable and upstanding endeavors.

By my actions, I pledge to honor the profession which I have chosen.

that are given out at the ceremony) for participating institutions.

The Ring Ceremony typically takes place as part of a college-level graduation—or pre-graduation—ceremony. At the University of South Florida, this event takes place the morning of the universitywide, cap-and-gown graduation ceremony; at Ohio Northern University, this event is part of the Honors Day activities held a few weeks prior to graduation. Present at the Ring Ceremony are the graduates, their parents, families, friends, and the faculty and administration from the College of Engineering. The ritual, based upon the ritual developed in 1971 at Ohio Northern University, involves having the graduates cross a stage when called by name, placing their hand inside a large ring to obtain their Engineer's steel ring, and taking the Oath of the Engineer. Unfortunately, while computer science graduates at both institutions are invited to attend this event, they are prohibited by the rules of the Order of the Engineer from participating, as the Order of the Engineer is strictly for students graduating from ABET-EAC-accredited programs. Consequently, the computer science graduates at both institutions have felt left out and have openly complained of such second-class treatment.

Providing equality and inclusiveness was a major impetus at both Ohio Northern University and the University of South Florida for developing

similar, in-house organizations for our computing graduates. To that end, the student ACM chapter at Ohio Northern University organized the Order of the Computer Scientist,[2] which held its first induction ceremony in May 2007 immediately after the engineers held their Ring Ceremony. At the University of South Florida, the College of Engineering has held a Ring Ceremony since 1989, which has included attendance by computer science graduates. In the early 2000s an effort was started on making computer science graduates feel they too "belonged" in this ceremony primarily focused on engineers. A separate oath and memorabilia item were introduced specifically for the computer science graduates in 2007.

This effort to form a new national-level organization for computing graduates is a direct result of the focus on inclusiveness for all graduates of the college. It was through communications between these two institutions starting in 2009 and kicked off by the Dean of the USF College of Engineering, John Wiencek, that the idea for a common organization open to all computing sciences programs was born.

Our Vision for a New Organization
An organization of computing professionals, named The Pledge of the Computing Professional, is envisioned as a way to bring a ritual rite-of-passage ceremony, similar both in purpose and in scope to the Ring

Ceremony of the Order of the Engineer, for graduates of the computing sciences. This proposed organization would provide both a standardized format for a rite-of-passage ceremony, including an appropriate oath based on the ACM Code of Ethics, along with appropriate logistical support for participating institutions. Accordingly, this new organization will provide a convenient way for programs to foster both professional pride and ethical responsibility in all graduates of the computing sciences through this public rite-of-passage ceremony.

All graduates of computing sciences programs would be invited to participate; however, the eligibility requirements are yet to be determined. In addition to graduates from traditional four-year computer science programs, should this organization recognize graduates from two-year programs and/or technology-related programs? Should there be different levels of recognition based on degree level (that is, AA, BS, MS, and Ph.D.)? Should it be international in scope, or limited to just the U.S.? Should membership be restricted to only those graduates from programs that are accredited through ABET or some similar program-specific accreditation body? These are all questions to be answered and are included in an action items list at the end of this Viewpoint.

The effort to define a new organization was initiated via a solicitation on the SIGCSE mailing list in March 2009. The following participants (in addition to the authors) were involved in the first round of discussions: Stephen O. Agyei-Mensah (Clarion University of Pennsylvania), Bill Albrecht (McNeese State University), Beverly Bachmayer (Intel), Venu Dasigi (Southern Polytechnic State University), Molisa Derk (Dickinson State University), Leslie D. Fife (Louisiana State University in Shreveport), Dennis Frailey (Raytheon Company), Becky Grasser (Lakeland Community College), George Harrison (Norfolk State University), Jim Huggins (Kettering University), Benjamin Kuperman (Oberlin College), Jody Paul (Metropolitan State College of Denver), Ray Schneider (Bridgewater College), and Tom Stokke (University of North Dakota). This group represents a diverse set of institutions and industry

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participation. Subsequent development has already begun with an online presence,[3] as shown in the screenshot on the first page of this Viewpoint, for furthering discussions.

Action Items
Sufficient interest has already been demonstrated for developing a new organization, but added community input and participation are needed for this effort to continue. In order to get this proposed organization up and running, we believe it is necessary to both define the needs of such an organization and create feasible solutions that meet those needs. The following eight items are considered critical action items:

▶ Establishing who is eligible for membership and determining the grades of membership.

▶ Determining the ceremony, symbol, and memorabilia item for the rite of passage (see the the Pledge sidebar on the previous page).

▶ Establishing a Code of Regulations to define the role and operation of the society, plus procedures for modification of this code.

▶ Deciding on the composition of a Board of Governors and/or other administrative bodies such as chapters and chapter advisors for the Society. This would include deciding on the terms for the board members and investigating the need for indemnification of Board of Governors and Chapter Advisors.

▶ Determining what operational committees (if any) are needed and

what meetings (if any) are needed.

▶ Establishing a budget. This would include investigating the use of a one-time "initiation fee" to provide an adequate cash inflow to cover material and operational expenses.

▶ Investigating legal matters including incorporation, 501(c)(3), copyrights, trademarks, insurance, and so forth.

▶ Determining if affiliation with ACM (for example, similar to the UPE affiliation with ACM) is possible and if/how it best makes sense to do this.

Where Do We Go From Here?
As mentioned in the introduction, what is presented here is meant to be the start of a conversation; accordingly, we welcome both comments and participatory involvement as we go through the process of addressing the aforementioned action items in the attempt to establish the proposed organization. Interested individuals and groups are encouraged to contribute via the discussion boards established at The Pledge of the Computing Professional Web site.[3] As previously stated, this new organization is not about accreditation, certification, curriculum, or academic achievement, but rather it is about acknowledging that our graduates build systems that are used by the general public, and that our graduates should build these systems in an ethical and responsible manner. What better time than graduation to acknowledge and promote this important notion?   ▣

References
1. ACM Code of Ethics and Professional Conduct, 2009; http://www.acm.org/about/code-of-ethics.
2. Order of the Computer Scientist, Ohio Northern University, 2009; http://www-new.onu.edu/academics/engineering/student_success_and_opportunities/order_the_computer_scientist.
3. The Pledge of the Computing Professional, 2009; http://computingprofessionals.wordpress.com.
4. Tau Beta Pi, 2009; http://www.tbp.org.
5. The Iron Ring, 2009; http://www.ironring.ca/.
6. The Order of the Engineering, 2009; http://www.order-of-the-engineer.org/.
7. Upsilon Pi Epsilon, 2009; http://upe.acm.org/constitution.htm.

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