

AIChE Centennial Book

Chapter 6 Awards

Awards and Fellows

The Institute recognizes its outstanding chemical engineers in two ways. The most prominent are the more than 60 awards, including monetary prizes, certificates, plaques, medals, honoraria, and invited lectures, administered by the Institute. In addition, the grade of Fellow is awarded to members in recognition of professional attainment and significant accomplishment in engineering. Selections in both categories are based on nominations. This chapter briefly extends the history of the principal awards described in the "HIGH LIGHTS...the first fifty years...of the American Institute of Chemical Engineers, 1908 - 1958 [AIChE, 1958], and, for the first time, summarizes the origins and development of the member grade and program of the AIChE Fellows. Also included are the core qualifications for awards and procedures for submitting nominations. Lists of awards, their criteria and recipients, as well as of the 814 Fellows as of this time, are in the Appendix.

Awards 1913 to the Present

The first awards of AIChE were given for best contributions to the profession via presentation or publication. The Institute Gold Medal, worth \$375, was awarded only in 1912, 1913, 1916 and 1920. Awards finally reappeared in 1932 for the Student Contest Problem with the A. McLaren White Award (first prize), the A.E. Marshall Award (second prize), Third Prize, and Honorable Mention. All of these awards are now sponsored by Omega Chi Epsilon.

For members of the Institute, the Gold Medal was replaced by the William H. Walker Award in 1935, "for Excellence in Contributions to Chemical Engineering Literature". The first awardee, Allan P. Colburn, received a certificate and a bronze plaque; in 2008 there is a plaque and \$5,000, plus a \$500 travel allowance. The next award, established in 1945, was the Junior Award, whose name was controversial for some years before being replaced in 1958 by the Allan P. Colburn Award for "for Excellence in Publications by a Young Member of the Institute". The original certificate and bronze plaque, which were received by Clyde McKinley and Robert R. White, have been enhanced to the current plaque and \$5,000, plus a \$500 travel allowance.

The Professional Progress Award was established in 1947 to recognize outstanding progress in the field of chemical engineering by a recipient less than 45 years of age at the end of the calendar year in which the award is presented. The award was \$1000 and a certificate provided by the first sponsor, the Celanese Corporation of America. The first awardee was Allan P. Colburn. Currently the award of a plaque and \$4,000, plus a \$500 travel allowance, is underwritten by Air Products and Chemicals, Inc. The Institute Lecturer is the honor of being invited by the Executive Board of the National Program Committee to present a comprehensive authoritative review of the chemical engineering science in his or her field of specialization and to receive a plaque and \$2,000. The first Lecturer was W.H. McAdams in 1949.

In the years that followed the establishment of these Institute-wide awards, the number increased to those given in Table 1. AIChE Institute Awards are selected by the Awards Committee and

Table 1. Current Institute Awards

Award	First Year	First Recipient
Institute Awards		
William H. Walker Award for Excellence in Contributions to Chemical Engineering Literature	1935	Allan P. Colburn
Allan P. Colburn Award for Excellence in Publications by a Young Member of the Institute	1945	Clyde McKinley Robert R. White
Professional Progress Award for outstanding progress in chemical engineering by a recipient less than 45 years of age	1947	Allan P. Colburn
Warren K. Lewis Award for Contributions to Chemical Engineering Education	1963	Barnett F. Dodge
Alpha Chi Sigma Award in Chemical Engineering Research	1966	Harry G. Drickamer
R.H. Wilhelm Award in Chemical Reaction Engineering	1973	Neal R. Amundson
Award for Service to Society	1973	Lawrence K. Cecil
Chemical Engineering Practice Award	1974	Robert G. Heitz
Arthur Dehon Little Award for Chemical Engineering Innovation	1988	George R. Chludzinski
Institute Award for Excellence in Industrial Gases Technology	1993	S. Alexander Stern
Board of Directors Awards		
Founders Award for Outstanding Contributions to the Field of Chemical Engineering	1958	Thomas H. Chilton, J.V.N. Dorr, Olaf A. Hougen, S.D. Kirkpatrick, Warren K. Lewis
F.J. and Dorothy Van Antwerpen Award for Service to the Institute	1978	F.J. Van Antwerpen

AIChE Board of Directors' Awards are selected by the AIChE Board of Directors. In addition, professional and student awards have been initiated by various elements of the Institute (current number of awards): Technical Divisions (31), Forums (11), Institute Committees (13), and Local Sections (4). There are now many student awards and scholarships (23) given by parts of the Institute. AIChE members also may be qualified for awards given by many other Societies and organizations (120). Recipients of the most important awards are given in the Appendix.

AIChE Fellows: 1969 to the present

The origin of the Fellow grade of membership resulted from a proposal of the Professional Development Committee, principally developed by D.L. Katz, R.E. Lenz and P.B. Lederman, submitted by Katz on April 1, 1969 and presented to Council by Lederman on May 3, 1969 [AIChE Document 69-5-12-30, 1969]. "The Reason Why" for the new grade was "Many more

members of the Institute make significant contributions to their profession than the 110 men now honored with Institute awards, but the majority of this large group does not receive recognition from the Institute. The proposed Fellow grade is intended for these Members. The Fellow grade will recognize in particular those chemical engineers whose contributions are not called to public attention. These include members who have achieved industrial success, whose accomplishments are confined to their organizations, or who have served the profession outstandingly." In addition, a letter to Council from D.L. Katz added perspective [AIChE Document 69-5-12-30 App. E, 1969]. "Last November, Bob Lenz, Chairman of the Professional Development Committee called me and asked if I would be willing to assist the Committee in developing a proposal to add a member grade of Fellow of the AIChE. The Committee had discussed the matter for some time and were ready to proceed with the proposal. Because of recent experience with Fellow grade in other societies, . . . , I accepted. . . . Over the years, I have been very sensitive to the limited number of people which the Institute honors with their awards. . . . one has no difficulty in looking around at AIChE meetings . . . , and appreciate that a far larger number of people there are worthy of a special recognition than receive awards. I consider the Fellow grade as an appropriate vehicle for extending the award system by an order of magnitude. . . . No system of recognition can be perfect . . . all nominees will not be accepted and should an unsuccessful candidate learn of his nomination, damage can be done. However, . . . inclusion of Fellow grade of the AIChE will permit bringing recognition to many outstanding people."

The proposal contained a description of the Fellow Grade, Criteria for Attainment of Fellow, the age distribution of the 31743 members at that time, and summaries from two questionnaires sent to Professional Development Committee members. Election to Fellow might be "in recognition of contributions made to the engineering profession or in recognition of significant accomplishments in engineering." Both "professional attainment" and "engineering attainment" were used in the criteria. The former included "contributions to the advancement of fellow chemical engineers and of the engineering profession." The latter "could be based on engineering practice, on process developments, or leadership in projects or product development and on managerial techniques for bringing engineering efforts to fruition. Technical publications, patents, and theoretical developments also are satisfactory evidence of engineering accomplishments." The expectation was that "the major contribution may be in either the area of engineering or service to the profession, but it is desirable that some accomplishments be present in both areas." The expectation after some time was that "about ten percent of the members over forty-five . . . achieve the grade of Fellow." In the first survey, "everyone checked professional attainments and 3 indicated that accomplishments in engineering did not seem necessary." In the second survey, 5 recommended professional and engineering attainment, while 10 recommended professional or engineering attainment. The second survey showed 17 for and 1 against the proposal, and the majority recommended 25 years as minimum time beyond the Bachelor's degree for election to Fellow, though several suggested less time or set a minimum age.

The Council Minutes of May 3, 1969 state, "The committee felt the use of Fellow grade in other societies is effective in recognizing accomplishments of members and that a far large number of AIChE members are worthy of special recognition. The inclusion of Fellow grade of the AIChE will bring recognition to many outstanding people and will encourage members to continue their efforts on behalf of their fellowmen." Council voted "that this be referred to the Constitution and

Bylaws Committee for preparation of an appropriate amendment to the Constitution which will add the membership grade of Fellow." Lenz, Katz and Lederman were thanked for their collective efforts and dedication [AIChE Document 69-5-12-25, 1969].

The Constitutional amendments and Bylaw changes were accomplished quickly. The Minutes of Council of August 23, 1969, note that I. Leibson discussed the Constitutional wording to create the Fellow grade. Council voted to change Article III, Sections 1, 2, and 8 of the Constitution [AIChE Document 69-9-8-43, 1969]. Section 1 added the Fellow grade of membership. Section 2, defining attainment and the number of Fellows, was moved to the Bylaws in the revision of 1977. While a few words of clarification have since been inserted, current wording of these sections [AIChE Bylaws, 2007] is essentially the same as approved by Council in 1969.

The subjectivity associated with judging attainment has caused some difficulties in setting the procedures for electing Fellows. Legal documentation began in 1969, when Council adopted Section 8 of the Constitution, also later moved to the Bylaws, stating that election to Fellow was by "vote of Council upon nomination by five Fellows or members." Since then, periodic changes to the Bylaws have occurred related to the functioning of the Committee on Admissions, such as in November 1995 and June 2007. Currently, the Bylaws state "It shall be the duty of the Committee to see . . . that the names of the applicants qualified for election to Fellow be recommended to the Board of Directors for election. In considering the qualifications of nominees for Fellow, the Committee should use a formal evaluation method and its best judgment in evaluating the Contributions to the Profession, the Significant Accomplishments in Chemical Engineering, and Years of Chemical Engineering Practice from materials submitted on the training, accomplishments, and experience of each applicant as submitted in the nomination packet." [AIChE Bylaws, 2007].

The challenges to developing the election process were first indicated by the Executive Committee Minutes of November 1, 1969 [AIChE Document 69-11-12-60, 1969] noting that a number of inquiries about mechanics of Fellow election had been received by the Vice President and the Secretary; these were forwarded to the Constitution and Bylaws Committee. Then the Council Minutes of May 16, 1970 [AIChE Document 70-5-25-23, 1970] stated that no recommendations for procedures had been received from either the Professional Development Committee or the Admissions Committee. "Liaison J.B. Martin said that the Professional Development Committee feels that the next step in the procedure for electing Fellows should be proposed by the Admissions Committee. But, it was said, the Admissions Committee feels that it should not get involved in nominations." Since Council felt that the nomination mechanism and the evaluation and election were separate, the "Secretary was asked to expedite the matter." The Secretary was apparently effective, since the Executive Committee minutes of June 27, 1970 [AIChE Document 70-7-6-29, 1970] report discussion of "a proposed form designed by the AIChE Admissions Committee for use with the Fellow Grade, plus guidelines on election to Fellow prepared by the Professional Development Committee."

The guidelines for election to Fellow of AIChE that were approved in 1970 included both the articulation of attainments as given in the Constitution and Bylaws and other details not published on the nomination form. These included "The man's significant accomplishments in engineering may be evidenced by an important invention or development . . . a series of patents

. . . which together indicate significant technical accomplishment. Publication is not the only evidence of technical contribution. . . . Job title in and of itself should not be considered as sufficient evidence for fulfillment. . . . Teachers may fulfill the career development portion of the requirement by having made significant contributions in the educational arena. These should take into consideration what novel contributions to educational methodology he has made and/or whether he has truly inspired those people who have been his students or have worked for him. Professional attainments. . . . A man should have a significant record of service. This need not all be with the Institute. However, service within the Institute at some minimum level and at some time with his career should be weighed heavily. Being a local section chairman for one year is certainly a significant contribution but in and of itself would not be sufficient to fulfill the requirements. . . . Active service on national committees over an extended period A major role in developing a national meeting. . . . other types of service through other professional societies, or through major public office or service, or through other significant contribution to society [would be a significant contribution]."

Editorial changes to the nomination form were made, the final versions were presented, and a consensus "apparently was that the statement and application were acceptable as is." [AIChE Document 70-9-15-34, 1970].

Shortly after the procedures were determined, the Admissions Committee received nominations and began considering recommendations to Council. While no Fellows were dealt with in 1970, two nominations were examined at the February 1971 meeting [Admissions, 1971a]. These were held for later consideration. At about the same time, Council [AIChE Document 71-3-09-08, 1971] voted that "all living Past Presidents through 1970, who meet the required number of years of chemical engineering practice and full membership status, be declared Fellows of AIChE."

However, difficulties persisted. At the May 15, 1971 Council meeting [AIChE Document 71-5-26-21, 1971], "the Secretary distributed a letter from the Chairman of the Admissions Committee concerning information on proposed nominees for Fellow Grade. . . . Committee was almost deadlocked in considering candidates because the names currently before them with a few exceptions, were not well known." Council requested the list of all nominees held in abeyance and suggested waiting a year before changing any of the procedures. They also voted to accept the suggestions of the Admissions Committee to elect the first three Fellows: J.R. Fair, E.R. Gilliland, and R.E. Lenz.

Admissions Committee activity continued on June 8 when six were approved, including one from February. The Chair of Admission, C.R. Landgren, submitted a letter to Council on June 22, 1971 listing the names and some particular accomplishments of each of the six recommendations. The citations were provided "only as a way of evolving a set of criteria to be used for recommendation." [Langren, 1971a]. Of the six, one (E. H. Amick, Jr.) was elected unanimously, even though his recommendation was made posthumously (Amick had died during the considerations). The Admissions Committee Minutes of July 8, 1971 [Admissions, 1971b] show that four more were "approved for ballot", including the other one from February, and ten were deferred to the August meeting. In his letter to Council about the supported nominations, the Admissions Vice Chair, E.P. Foster, again included brief statements of particular accomplishments and attainments "to develop a list of criteria." Foster also indicated that the

problems of the Committee were not fully resolved since it was "feeling its way along an uncharted course." ". . . we have little problem in determining whether he meets the minimum requirements for Fellow. However, we have a major problem when we call for a vote. . . . since awarding Fellow grade is to bestow an honor, we should be considering the most deserving of our Members. This frustration is indicated by the vote on one of the nominees presented here. There were as many abstentions as yeas (no negatives)." [Foster, 1971]

At the August 5 meeting, six of the ten previously deferred were approved for ballot, three were further deferred, and one was denied. One of the two new nominations considered was deferred while the other was denied [Admissions, 1971c]. The denials were because "we could not determine from the information presented to us any outstanding contributions in either the field of professional attainment or of engineering accomplishments." For one person, "his contributions to engineering have been to other branches than the chemical engineering branch. As we interpret the requirements for Fellow of AIChE, we would require a contribution to the chemical engineering profession by all Fellow nominees." [Landgren, 1971b]

On August 12, the Secretary determined that election to Fellow grade "should now be part of a regular routine operation." As a result, "the Secretary for Council voted that" fourteen members unanimously recommended by the Admissions Committee be elected to the grade of Fellow. These included all but four from the Admissions Committee recommendations from their June, July and August meetings. The four were from the July meeting commented on by Foster; the Secretary sent the names back to the Committee "with the request that Council would like to know why there were abstentions from the votes since Fellow procedure is to have judgments rendered on what is submitted . . . and why in the face of this procedure Admissions Committee members had to abstain from voting on a Fellow candidate." [AIChE Document 71-8-12-31, 1971]

The Admissions Committee continued to meet monthly through December 1971 [Admissions 1971d-g, 1971]. During that time, six persons were approved and one was denied. The significant professional attainment of one was for activities in the American Gas Association; all previous recommendations had AIChE as the organization of principal service [Landgren, 1971cd, 1971]. By December 30, 1971, the Secretary had voted a total of 17 more for election to Fellow [AIChE Documents 71-10-7-36, 71-12-30-52, 1971]. Thus, during the first year of nominations and selection, all living Past Presidents (apparently about 16) and 34 others became AIChE Fellows.

Still, the Secretary in January 1972 [AIChE Document 72-1-26-3, 1972] expressed "his opinion that the spontaneous nomination of worthy AIChE members for Fellow is not happening." In addition to a program to facilitate nominations, possibilities of "automatically electing AIChE Presidents . . . at the end of their term; . . . a mass election of AIChE members who received awards sponsored by other groups such as the Fritz Medal, the Perkin Medal; those elected to the National Academy of Engineering, etc." The Secretary also felt that "the Fellows Sub-committee of the Admissions Committee really ought to be composed solely of Past Presidents of AIChE which could evaluate and elect by mail." It is not clear how many of these proposals were adopted, but in the subsequent years the number of Fellows grew steadily. By November 2007,

the total number was 814 and currently the number added exceeds those deceased by as many as 20 per year.

The initial electees were all male since before 1980 there were essentially no women chemical engineers who had been in practice for the required 25 years. Apparently the first female AIChE Fellow was Patsy Chappellear, followed by Elizabeth Drake, both in the 1980s. Drake commented that the plaque statements had only male-specific terminology; very quickly, a version with terms of proper gender was developed. She got both versions.

Nominations

While the qualifications have not substantially changed from the beginning, there have been revisions of the Fellows nomination form, apparently both to make the process simpler for submission and for Admissions Committee evaluation. The current form (2007) can be found at http://www.aiche.org/uploadedFiles/Conferences/DepartmentUploads/PDF/Fellows%20Application_NEW_4_NW.pdf. The materials have always been filled out by hand and submitted to AIChE Headquarters in multiple hard copies. An electronic entry version is to become available before too long.

Nominators must complete the form with information about the nominator and the five sponsors (who must be Fellows or Senior Members, with no more than two from single organization) submitting letters of recommendation. The nominee must provide lists describing education; professional employment position, responsibilities and accomplishments; honors and publications; and service to chemical engineering and AIChE. The new form gives a full page of instructions to the initiator, requirements for Fellow grade, and detailed guidelines for election including both Bylaw phrasing and examples of suitable and insufficient service contributions. In addition, the form has a full page "Guide for Sponsors of Nominees" for the structure and content of supporting letters, also with extensive examples.

Part of the difficulty of evaluating nominations is that they may not provide adequate details of the nominee's accomplishments and service; in such cases, the Admissions Committee requests further information.

Fellows Organization 1980s to the Present

The AIChE Fellows apparently did not establish a formal organization for many years. The earliest gatherings at national meetings seem to have started about 1980 when, following the breakfast meetings of the Executive Committee, those Fellows not on the Committee were invited to join the leadership in discussing the actions and issues of the Institute, and share in the leftovers from the earlier breakfast [Perna, 2008; Buonopane, 2008; Brown, 2008]. Early on, there were several active individuals, including Marvin Livingood, Henry Brown, William Henke, Klaus Timmerhaus, Ralph Buonopane, Angelo Perna, Deran Hanesian, Ralph Troupe, James Baird, and James Donovan, who moved the Fellows toward a more formal organization. However, there was a reluctance to take on the responsibility of organizing and leading the Fellowship. Finally, Livingood said that he would become the "Big Wheel" for some years, and Brown chose the title of "Spare Tire" to substitute when necessary. After Livingood, Timmerhaus, Henke, and Brown were the "Big Wheel" for some time (Livingood became the

first "Flat Tire"). Successors with terms from 2-4 years have been Perna, Hanesian and John O'Connell (2004-).

The meeting program of 1982 lists a Fellows Breakfast event, but the present format was initiated several years later when Perna organized the meal as a special event at national meetings and developed a formal agenda. The Breakfast has been traditionally scheduled early Tuesday mornings and held in the Conference venue. Initially the meal was a full served breakfast. As time went on, the cost went up and the quantity and quality of the food went down. Around the turn of the 21st Century, Perna was always heard to say, after seeing the "continental buffet" available, "Twenty-five dollahs for dis??" In 2006, at the suggestion of Fellow Emmett Miller, the Breakfast was held off-site in San Francisco at Sears Fine Food. The attendance, food and fellowship were all excellent; the opinion was that this should be the normal arrangement. Since such arrangements can be difficult in some meeting cities, AIChE Meeting Staff has been able to negotiate full, served breakfasts at the Conference venue for less than \$25.

The agenda for the Breakfasts has evolved to a welcome by the Big Wheel; a Moment of Silence for Fellows deceased since the last Breakfast; individual self-introductions; awarding of pins and plaques to new Fellows; reports from the President, President-elect, and Executive Director and others involved in Institute Activities; business items including commentaries by attendees; and, for many years, one or more humorous stories and jokes, most often told by Hugh Guthrie until he passed away in 2007. It was only in recent years that AIChE offered Fellows the options of receiving their pins and plaques at a Fellows Breakfast, a Local Section meeting, or via mail. The welcome provided at the meetings is particularly gratifying to the New Fellows. Leadership reports to the Fellows started with the formal Breakfasts in the 1980s; Fellow feedback has always been much appreciated.

The activities of the Fellows Program have become more formalized in the 21st Century. John O'Connell created a listserv to send messages with meeting agendas and requests for involvement to the Fellowship. Unfortunately, the very first message sent nearly crashed Fellows' systems, since thousands of bad e-mail addresses bounced through the whole list until it was shut down a few hours later. A number of Fellows asked to be unsubscribed because of the irritation or from being overwhelmed by the barrage of notes. We are trying "to get them back."

In recent years, Fellows activities included cosponsoring events at national meetings. These included the Energy Forum plenary session at the Annual Meeting in Cincinnati in October 2005, and the Globalization Forum in San Francisco in 2006. A variety of other potential activities have been formulated, with some germinated. These included the Fellow's Forum to provide an opportunity for focused discussion on a timely and important topic; local Career Cycle Clubs with periodic meetings across generations of professionals to share values, practices and advice; participation of Fellows in Student Chapters and with the Young Professional Advisory Board. At this point, none of these have resulted in long-term activities, but continued efforts will be made so the Fellows can contribute further to the mission of AIChE.

In 2008, a Task Force, Chaired by Fellow and Board member Cheryl Teich; with Fellows and Board members Neil Yeoman and Ignacio Grossmann; Fellow and Admissions Committee Chair David Eckhardt; Christina Ingram of AIChE staff, and Fellow's "Big Wheel" John O'Connell,

was commissioned by AIChE President, Larry Evans, to examine how to "improve the impact/support of the Fellows program on the AIChE mission/vision". The group is considering what, if any, modifications of the qualifications, revisions and transparency in the nomination and election processes would be appropriate for contemporary and future times, as well as consider enhancements of the Program to make greater Institute impact. Their report is due to the Board of Directors by the Centennial Meeting in Philadelphia.

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