

PROFESSIONAL RELATIONS

BULLETIN

Division of Professional Relations

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DENNIS CHAMOT, *Editor*

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FROM THE EDITOR . . .

Content

The bulk of this issue is devoted to our symposium, "Responsibility to Whom? The Professional's Dilemma." We hope you find it interesting. I think it came off fairly well, but I was a bit disappointed that the question period did not deal more with ethical problems and real life situations. We would welcome further comments from our readers.

Report from Chicago

As usual, the national meeting last summer offered a mixed bag — a few minor successes and a lot of frustration. I'll start with the good news. The Council Committee on Professional Relations (CCPR) dealt with several items of interest to this Division. The DPR sponsored addition to the Guidelines, the so-called "strike guideline", was approved in a modified form. The two sections are as follows:

Chemist. "The chemist should use the period of an enforced work stoppage occurring on the premises in a constructive and professional manner. If possible, the chemist should continue to perform all regular duties, although the chemist may choose if requested by management to assume other duties on a temporary basis."

Employer. "The employer should not penalize the chemist who performs only his or her duties during any enforced work stoppage occurring on the premises."

Note that this is not quite the original suggestion we made, and it doesn't even go as far as the law already requires in protecting chemists in these situations, but that's the ACS. The new guideline still has to be approved by Council, so if you support it, let your Section councilors know before the next national meeting.

CCPR also considered the question of an ACS position on the current attempt to amend the Service Contract Act to cover professionals. This law requires that employees who work for companies which receive contracts from the Federal Government for the performance of services (e.g., research and development) be given prevailing salaries and benefits. In other words, it seeks to eliminate the vicious practice of wage busting, a problem which crops up all over but which has been particularly severe

among certain groups of engineers. CCPR voted to recommend that the ACS support the legislation.

Bob Gould stopped in and talked about *Advances in Chemistry* publication, "Legal Rights of Chemists and Engineers." As you know, this book is the result of a DPR symposium. Any individual DPR member may buy the book at the special discount price of \$9.50 (regular price \$16.00), if ordered before January 31, 1978. If any of you have already bought the book at a higher price, you may apply directly to Robert Gould, Books Department, ACS, for a refund (you must send your receipt). All new orders must also be sent directly to Mr. Gould to get the discount.

Now for the bad news. The Council meeting was as frustrating as ever. The well oiled machines kept rolling along. I will highlight here only one or two items.

The Council once again dealt with the horrendous problem of the Free and Open Election! A few more parts of the so-called "Fair Elections Procedures" petition were brought up (where will it end?). A constitutional amendment dealing with regional and national elections passed. This gives the Council Policy Committee (CPC) the authority to investigate complaints, and then to recommend necessary action to the Council. The latter group is given the power to set aside the results of the election, and call for a new one.

There was a great deal of discussion on this issue, and an associated bylaw change was recommitment so that detailed objections could be worked out. One should keep in mind, of course, that while all this energy is being expended on revamping the constitution and bylaws of the ACS, there have been darn few complaints filed on the hundreds of elections held in the Society each and every year (president, Board members, Local Section councilors, Division councilors, other Section and Division officers). I leave it to your imagination as to whom all this activity is directed. (Chamot voted against these amendments; Pinkowski did not attend the Council meeting).

Another item on the Council agenda caused a bit of a stir. This involved a proposal to increase the number of councilors from Divisions. As you recall, the old system allotted councilors to Local Sections based on size,

while Divisions were given two councilors each, regardless of size.

In general, those who favored increasing the number of Divisional councilors argued that the main functions of the Society were in the technical areas, and that more Divisional councilors were necessary to assure proper consideration of technical issues before the Council, including the balance between technical activities and other professional activities.

Others argued that *all* councilors were chemists, so that it was not necessary to single out specific councilors as representatives of the branches of chemistry; that representation required contact, and that Local Section members had far easier access to their councilors than was true for most Division members, including the opportunity to tell them of their views on technical subject areas; and that increasing the number of Divisional councilors would dilute the effect of Local Section councilors.

A big point was made in the presentation of this proposal that no Local Section would lose a councilor. However, I pointed out that three or four Divisions would. The new scheme provides that Divisions with fewer than 500 members can have only one councilor, a loss of one. Well, I innocently proposed that the scheme be modified to provide a minimum of two councilors per division. This would keep things as they are for the smaller Divisions, and would in any case involve only three or four councilors in the next few years.

I must say that I was unprepared for the storm of argument that erupted in response to my modest proposal. Needless to say, my amendment went down to defeat, and the original proposal passed.

At the time, I was confused as to why my amendment was fought so vigorously. Then I looked again at the table which accompanied the original proposal. Under the new system every Division with more than 500 members gains at least one councilor, *except the Division of Professional Relations*. We become the *only* two councilor division, and if our membership drops a bit, we lose a councilor. That's why it was so important to the other side, and that is why each of us must put out a major effort to *expand* the size of the Division. (Chamot voted against the main motion).

I should relate one illustrative example from the debate on this issue of Divisional councilors. One member of the Board stated that a new society devoted to photochemistry was being organized outside of the ACS. She used this as an example of how the technical community feels left out of ACS affairs. However, some time later, a founder of the new group rose to correct this. He noted that the chemists had not withdrawn from the ACS at all, but that what they were forming was an *international* society, and that most of the active participants thus far were Canadians. Could the Board member not have known this?

You know, the new commission system was developed to provide more control over ACS affairs by those most directly concerned. I would have thought that the new science commission would more than adequately take care of any problems that may exist about proper representation for divisions in the scientific activities of the Society.

Maybe representation is not the real issue. I can't help but feel that a lot of this is nothing more than an attempt to downgrade professionalism activities within the Society. What do you think?

—Dennis Chamot

BOOK REVIEW

I would like to bring to your attention a most interesting recent publication. Technically, it is the proceedings of a conference on women and the workplace put on by the Society for Occupational and Environmental Health. The contents are a rather comprehensive (over 350 pages) mixture of technical articles, general articles, and discussions on the special health problems of working women and their social and legal consequences.

A list of session titles should give an idea of the range and focus of the papers: Risks of Toxic Substances to Future Generations; Birth Defects, Cancer, and Miscarriage Associated with Anesthetic Gases, Vinyl Chloride, and Other Industrial Chemicals; Lead and Women, A Unique Problem?; A Safe Workplace: Current Perspectives and Future Needs; Health Risks Associated with Job Placement Patterns Related to Sex.

The editor is Dr. Eula Bingham, currently head of the Occupational Safety and Health Administration. Participants included a large number of knowledgeable people from industry, academia, government, and unions. All in all, a book that should be of interest to all chemists concerned about health problems associated with exposure to chemicals.

Women and the Workplace, \$16.00 including postage and handling. SOEH, 1714 Massachusetts Ave., N.W., Washington, D.C. 20036.

Legal Rights of Chemists and Engineers

Advances in Chemistry Series No. 161

Warren D. Niederhauser, *Editor*
Rohm and Haas Company
 E. Gerald Meyer, *Editor*
University of Wyoming

Here is the first volume of its kind to cover an entire spectrum of viewpoints on the legal rights of chemists and engineers and the problems they face as professionals.

Scientists in research and development are briefed on their rights in matters of employment contracts, special compensation and rewards for inventors, trade secrets, layoffs, unionization, and much more.

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SYMPOSIUM:

RESPONSIBILITY TO WHOM?

THE PROFESSIONAL'S DILEMMA

The following is an edited transcription of the symposium DPR presented at the national ACS meeting in Chicago on August 30, 1977. We hope you find it interesting and stimulating, whether you are seeing it for the first time, or if you were in the original audience and are encountering it again. We invite comments from our readers.

The moderator is Dennis Chamot, a Councilor from the Division of Professional Relations.

Chamot: The subject that is going to be discussed tonight has always been important, of course, but is becoming even more so as time goes on. This is in part because of new laws and government regulations which place new burdens on technical people, including chemists and chemical engineers.

I think we're all familiar with such things as the Occupational Health and Safety Act, the National Environmental Protection Act, the Toxic Substances Control Act, FDA regulations and so forth. The main question before us tonight is, to whom does the professional owe his primary loyalty? Is it to the employer, to the government, to the public at large? And a related question: What can and should professionals do when they disagree for moral or ethical reasons with the actions or directives of their superiors.

We've seen at least two major cases in recent years which demonstrate the potential risks. One involved engineers working on the San Francisco BART train system, and the other involved several engineers working on nuclear power plant construction for G.E. In both cases the engineers expressed concern about possible safety problems, but felt that their warnings were not being heeded. The BART engineers went public and were fired. The G.E. engineers resigned and then brought the issue before the public. In the BART case, at least, the fears proved to be correct because the system demonstrated some real problems after going into operation.

Chemists work in a complex and inherently hazardous world. What they do may directly or indirectly affect the health and safety of their colleagues, plant workers and the general public, and may contribute to the pollution of our air and water. Clearly, chemists as professionals must bear some responsibility for their actions -- but to whom? And what actions must they take to escape being guilty of inaction when action is called for?

Our panel tonight consists of four chemists representing a diversity of backgrounds and opinions. Each will offer a brief formal presentation. Afterwards, we will open up the program for discussion and I hope those of you in the audience who have views or questions in this area will participate actively.

Our first speaker tonight is Alan Nixon, who is, of course, former president of the American Chemical Society and is, furthermore, the first chairman of the Council of Scientific Society Presidents. Other background includes the fact that for many years he was an industrial research chemist.

THE PROFESSIONAL'S RESPONSIBILITY: ENEY, MENY, MINEY, MO

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Nixon: There can be no question in anyone's mind that professional employees, whether in the public or private sector, do have a major responsibility to the public to guide its well being. This is emphasized in the codes of ethics of every major profession, and the various professional societies have set up a variety of mechanisms to ensure that members of their profession do indeed meet this responsibility. Probably the strongest of these (or at least the best publicized) are those of the medical and legal professions who have well established systems of committees, in effect courts, before which members can be charged and if found guilty of flagrant violations of the codes of ethics can be expelled from the profession. Since members of both these professions have to be licensed in order to practice, these mechanisms have very sharp teeth indeed. Professions whose members do not have to be licensed tend to have much less stringent methods of enforcing their codes of ethics and tend to be more concerned about violations against employers than against the public. This is certainly true in the case of chemists.

Of course, the responsibility that a professional can extend in the protection of the public is inevitably weighed in the individual's mind in the balance against his responsibility to other entities such as himself, his family, his employer, his professional society, and to his country and more broadly to the world. In an effort to assist the professional to make up his mind how these various responsibilities will be discharged, many professional societies have drawn up guidelines for employment in recent years. These deal not only with the way in which they think an employer should treat his professional employees but also discuss the responsibility of the professional to his employer. However, they do not spell out in any great detail what his responsibilities are to the public, although this is mentioned.

The two major sets of guidelines that affect scientists and engineers are those of the American Chemical Society, "Professional Employment Guidelines," and the engineering societies, "Guidelines to Professional Employment for Engineers and Scientists." Both sets of guidelines have the deficiency that they have no force in law -- they are merely voluntary and may be observed by either the employer or the employee as they choose. The ACS guidelines have the virtue of being regarded and stated as being minimum standards so that there is no doubt that the Society does expect employers to observe them and also expects

the same of employees. Generally speaking, the engineering societies have chosen to regard theirs as "merely guidelines," with the implication that employers have no real obligation to observe them. (It is rather amusing that the engineers who are vigorous in their insistence that engineering standards for materials and practices be certainly regarded as minimum standards and strictly observed are not willing to adopt similar standards with respect to their employment.) So, at the present time the professional employee must recognize that if he chooses to discharge his responsibility to the public, he may be putting some of his own responsibilities in jeopardy, such as to himself, to his family, and even diminishing his capacity to assist the public. (If he is fired, as an unemployed professional he will have little time to consider much else than merely staying alive.)

In the Conference on Trade Secrets and Toxic Substances which was held at Berkeley Springs, West Virginia, in February 1977, considerable consideration was given to the point of how the professional should discharge his responsibility to the public in the light of the burden placed upon him by the Toxic Substances Control Act. The group considering this decided that the professional should be extremely careful about how he went about disclosing to the public violations specifically with respect to toxic substances and the probability that he would have to reveal some of his employer's trade secrets (or that would tend to be thought of as trade secrets) in alerting the public to possible dangers from toxic substances.

We decided that, first of all, the professional should go to his immediate supervisor and draw to his attention his perception of what would constitute a danger to the public and try and get the danger discounted at that level. If his response was not satisfactory, then he should go as high up in the company as he could (without getting himself immediately fired). If still not satisfied with the response, he should then discuss the matter with experts in his own company (or laboratory or division or so forth) and attempt to get advice that would satisfy him one way or the other as to what his future course of action should be. If this advice reinforced his original opinion, then he should return to his management, tell them what the substance of the advice was and notify them he would feel compelled to go outside if no satisfactory resolution of the problem was

accomplished. Again failing satisfaction, then he should feel free to go outside his work location and attempt to get the opinion of outside experts in the field of concern. If again getting reinforcement to his opinion, he should then again go back to his management and failing satisfaction, then attempt to get help from his professional society (if it was of such a nature that a plea for assistance would have any chance of being fruitful). If still of the opinion that the problem existed and was of vital concern for the public, then he should notify government agencies and be prepared to notify the media if resolution of the problem did not appear to be likely.

We recognize that as soon as he, particularly, went outside his local management he was placing his career in jeopardy and that he should be extremely careful to weigh the possible consequences of his action. Employers, both public and private, have made it clear either verbally or through their reactions that they feel the first responsibility of the employee is to the employer. If an employer of that conviction is involved then it is likely that the sequence of events outlined above would lead to termination -- perhaps of a summarily and even of a vindictive nature. Even though there are provisions in both the Occupational Safety and Health Act and the Toxic Substances Control Act that indicate that parties who come forward with information will be protected through the courts, it is extremely likely that as far as professional employees are concerned these are not adequate. The professional is particularly vulnerable to subtle discrimination which can hamper and ruin his career. Though admittedly such discrimination cannot be entirely protected by legislation, it would be extremely beneficial and in the public interest to have specific legislation on the books to protect professional employees. These are the employees who know most about what is going on in a company or in a laboratory or government agency and who are most susceptible to subtle discrimination.

As a first approach to such legislation, I have taken the basic core of the employment guidelines of the professional societies but I realize that this is probably not going to prove adequate in terms of a legislative solution. I am trying, at the present time, to get input from a variety of professional employees, professional society leaders, legislators, lawyers and whistleblowers to try and work out more adequate provisions which might be incorporated into such a law. As I see it, even if such legislation is put on the books it will not erase the necessity for support from the professional societies. A law does not operate unless it is called upon to operate and individual professionals will still need assistance with regard to their rights and responsibilities under such a law.

Chamot: Next we have a member of the academic community. Prof. Bruno Jaselskis is on the chemistry faculty of Loyola University, in Chicago.

THE RESPONSIBILITY OF ACADEMIA

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Jaselskis: The title of this brief presentation on "The Responsibility of Academia" is much too broad and will be limited to the training of professional chemists, albeit scientists. Academia covers such a vast area of all aspects of human endeavor. I shall focus on only a small segment of the academic world, not as an administrator, but as a working member in the training and teaching of future chemists, and hopefully future leaders of our society. Furthermore, I am going to speak as a member of a school which is not the Mecca or Medina of the academics, but a well established urban university placed in the crossroads of our nation and in the industrial heart of the country, where our trained product is needed and must be prepared to face the problems not only of today, but also of tomorrow.

In order to prepare our future leaders, we are faced with many pressures from the various segments of our society, particularly the students, who are the primary beneficiaries of the years spent behind the ivy walls of universities. Thus, we as educators, need to assume the responsibility for educating and enriching each individual. We need to resist immediate demands and pressures, we need to chart the unknown course of our future, and yet, above all, we need to produce creative individuals not only as chemists, but also as people. Our primary goal, therefore, is to educate the "total person" rather than train the student for a particular, and perhaps limiting, skill.

In a recent article, Dr. Steven Muller, President of Johns Hopkins University, (Dædalus, Fall, 1974) posed the question, "Higher education or higher skill?" Traditionally, American higher education had rather successfully transmitted knowledge, and its inherent, associated values. Yet, with the accelerating pace of technological developments, the emphasis of education has shifted to professionalism and specialization in certain skill areas. The democratization of primary and secondary education with the subsequent pressures on the colleges have definitely influenced the basic goal of academia at large, and the primary aims of higher education, which were to educate a graduate well-groomed in basic principles of knowledge, have now been changed.

Thus, according to Dr. Muller, the universities face three possibilities for the future: (1) abandon democratization and return to a society in which higher education is reserved for a small minority, (2) abandon education with concentration exclusively on skilling, or (3) attempt to restore the possibility of general education, which would allow large numbers to benefit in full from what was once offered to only a few. These questions might appear

as if they are problems of today, yet similar questions were raised over 50 years ago. In the editor's remarks to the T. W. Richards address [*J. Chem. Ed.*, 6, 2239 (1929)] the editor states that, "The scientist and, in particular, the chemist, is so often pictured as an inarticulate individual, whose nose is eternally thrust into some unintelligible technical treatise or over the rim of the beaker, and whose eyes never rest upon any farther horizon than his laboratory walls, that we think something should be done to dispel such an impression. Otherwise the number of misguided scientists who try to live up to that picture is apt to increase. Too many students seem to be acquiring the idea that the limitations of narrow vision and inadequate vocabulary, inexpertly handled, are guarantees of scientific virtues." In his address, T. W. Richards states: "Our present efforts and our hopes for the future are founded upon past acquisitions. Into the fabric of this science (chemistry) men have woven the thoughts of ancient Greek philosophers, the magic of Arabian alchemists, and the practical discoveries of the artisans . . . The complex fabric enfolds the earth, indeed, the universe with its far-reaching threads . . . Step by step we gain knowledge, and with each step we acquire a better opportunity for improving the lot of mankind and for illuminating the dark places in our philosophy of nature."

Thus, these views may encompass the true nature of academia in preparing the student, not only as a member of a professional group, but also as an intelligent member of this society. This view represents the noble aspects of academic training and the formation of a complete man.

On the other hand, day-to-day pressures dictated that the trained individual should fill a useful niche and should be immediately usable in our technological enterprise. These pressures, by far, are not the present phenomena, but have existed at all times. Irving Langmuir [*J. Chem. Ed.*, 7, 530 (1930)] states: "We need men who are willing to do analytical and routine work, and such men are going to be needed in large numbers, but the country would suffer tremendously if, on this account, all students were trained in the same way." What appears is that at different times we need chemists skilled in one or the other areas, yet at no time should academia become a rapidly changing fashion world, otherwise, "the country would suffer tremendously." Like T. W. Richards, Irving Langmuir states that "the method of thinking, the method of using fundamental knowledge, these are essential." In the eyes of these two Nobel Laureates, the primary purpose and goal of academia is to educate an individual in the art of fundamental

knowledge, and then the skilling of the individual in the application of that knowledge.

Dr. Steven Muller, in the paper earlier mentioned, asks whether the recovery of general knowledge is possible in late 20th century America, and what kind of remedies academia should take in educating the student. In order to accumulate general knowledge, he suggests that the following be maintained: (1) absolute standards of verbal and quantitative, literate competence throughout the entire curriculum, (2) mandatory instruction in basic history, (3) knowledge of general human biology, and (4) full fluency in a second language. This appears a modest, and yet very formidable demand of the educational system. By far, this should be expanded into the inter-disciplinary areas such as psychology, economics, environmental science, philosophy, ethics, and others. Thus, the multi-functional core idea should not be a license in the introduction of any course on the existing listing. These courses should be broader and the schools should stress a general appreciation and importance of these areas in our day-to-day living, whether it be in ethics, bioengineering, energy, or economics . . . for whatever affects us now, will affect us in the future.

This raises an interesting point, namely, that the academic experience for the students should have relevance. The chemistry taught in our schools should not be a sterile exercise of formulas alone, but should stress the importance, at each level of competence, that many of these chemical reactions, and their implementation, have a profound effect on our world. In freshman chemistry, Solvay or Haber processes may be only names to be learned, but these processes were vitally important to the chemical industry and to consumer lives. Chemistry is in a position where it interacts with people at large no matter what chemists may accomplish. Whether we produce a miracle drug, an essential food extender, or a toxic cloud of pollutant, we shall either be praised, damned, or looked upon as the black magicians of the yesteryears, who hopefully will be able to solve all problems, be it energy, eternal youth, or chemically induced omnipotence.

Relevance in education produces value judgments, and this aspect of education cannot easily be ignored in any discipline, since it is formed by the process of individual and personal interactions by scholars and with scholars. Thus, entirely video-taped, computer-mechanized training can deprive the student of a very critical aspect of forming a complete person. In any leadership position, value judgments are of great importance. The success of a manager depends not only on the knowledge of the subject matter, but also in making the "right decision" by utilizing value criterion.

Academia, besides transmitting knowledge and helping in the formation of values, has a direct responsibility to students, that is, to teach something useful and applicable to daily life. In the Babylonian Talmud, Kiddushin stated that: "He who does not teach his son a trade teaches him, as it were, to become a robber." Cervantes, in *Don Quixote*, states: "A trade that does not feed its master is not worth two beans." Academia must come to grips with the reality and sellability of the product, or conversely, adequate skilling for the available jobs. For instance, in chemical training, elimination of vigorous laboratory work would deprive the student of practical experience and, thus, of possible job opportunities.

The other important consideration of academia should be training a sufficient number of chemists, but not an excess amount. In particular, this is true with the higher degree candidates, such as Master's and Ph.D.'s. Over production of Ph.D.'s has caused extremely grave problems for the past seven or eight years, and it is just recently being gradually corrected by supply-and-demand forces. The present day statistics show that the proportion of new Ph.D.'s accepting a post-doctoral as a first job has increased steadily from 15.7% in 1960 to 47.5% in 1975 (*C&E News*, May 2, 1977); in comparison, only 46.1% entered full-time non-post-doctoral employment in 1975. The 1985 projected surplus of 8.1% Ph.D. chemists should deter students from aspiring to become Ph.D. chemists. These statistics will have an effect on students only if teachers at high school and college levels present the facts to them. Though academia should maintain the student's welfare as their primary interest, at no time should academia make the decision for its students. The academies should remind the student of the realities of the 1970's and 1980's, which will demand more flexible training than in the past, and perhaps warn the student of the possibility of having to accept a chemical job that is less than his ideal. Thus, academia should, and must, be well informed of the national needs of scientific manpower. In addition, the granting agencies must not encourage over supply of professionals in any particular field.

Even now, M. M. Joullic, Chairman of the ACS Committee on Economic Status, states that: "A dedicated, well-trained chemist stands an excellent chance of finding a job in the chemical profession. Every profession has its risks, and no one should enter chemistry if he or she is primarily concerned about employment security. And I'd say to the person who is interested in chemistry solely as a job: Forget it!" Marginally qualified students will have difficulty in finding a suitable job, however. According to Dr. Allan L. McClelland, Chairman of the Subcommittee on Annual Reports and Surveys, "a talented and highly motivated person should certainly pursue a career in chemistry if he so desires." (*C&E News*, July 4, 1977)

In the light of job opportunities, it becomes very essential that the training of the future chemists would open many interdisciplinary avenues and improve chances in securing a job in business, public relations, etc.

In summary, academic responsibilities are: (1) to transmit knowledge and its values, (2) to train essential skills, (3) to open new avenues in the interdisciplinary areas, (4) to encourage the best possible students to pursue the profession, and conversely to inform the lesser students to prepare themselves for the various, viable alternate possibilities, and (5) to chart new directions for the world and national needs. At the same time, academia must be ready for the changes of time since "One change always leaves the way prepared for the introduction of Another." (Machiavelli, *Il Principia*)

Chamot: Our next speaker is employed full-time in the chemical industry. Ernie Gilmont, technical director of A. Gross & Co., Newark, N. J., is a former President of the American Institute of Chemists and is the current chairman of the Council of Scientific Society Presidents.

RESPONSIBILITIES OF THE INDUSTRIAL CHEMIST: DILEMMA OR CHALLENGE

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Gilmont: I'd like to preface my remarks by congratulating the chairman and the Division of Professional Relations for sponsoring a symposium which deals with our responsibilities. Considerable attention has been focused in recent years on what could be considered self-serving subjects: salaries, benefits, recognition, job availability and so forth. But while these subjects deserve attention, we have an obligation to provide a balance, and we're doing so here tonight by considering our responsibilities as well as our rights.

However, I take issue with the premise given this symposium by its title. While there is no question we all have responsibilities in several directions, I believe it is an error to propose that this presents any one of us with a dilemma. A dilemma, after all, is a problem seemingly incapable of solution. In other words, "Responsibility to Whom? The Professional's Dilemma" implies that because of our many diverse responsibilities, we face, as the definition states, "situations involving choice between unsatisfactory alternatives."

Quite to the contrary, I believe the true professional is faced not with a dilemma, but with a challenge. My remarks will address this challenge and the special opportunity I see presented today to the industrial chemist. I will concentrate my remarks on three areas of our responsibilities: to self (including family), to the public, and to the employer.

Self The most important responsibility of any professional, in my view, is to be a professional. Much has been written about professionalism, but not all the discussions refer to the responsibilities of the professional. In his article, "Think Like a Professional", W. H. Weiss put it this way: "A true professional is excited about his work, promotes his field, seeks responsibility, maintains integrity, strives for competence and displays initiative, creativity and mature judgement." (1) While stating that we should promote professionalism, Weiss asked these questions: "Do we carry out our responsibilities in this vein? Do we always consider the effect of our scientific decisions and accept responsibility for them?" If we expect to improve our value to society and to our employer (and we do), if we expect to improve our public image (and we do), then the answer to Mr. Weiss's questions must be, "yes". I would add one more question: Do we accept the prime responsibility of what is called "keeping up"? Our first responsibility as scientists, after all, is to maintain our science.

Any discussion of responsibility to self must obviously include responsibility to family.

I know of no better way to address this responsibility, and provide for your family, than by accepting a long-term commitment to professional growth. Our colleague, Butch Hanford, puts it more simply: "Take care of your chemistry and it will take care of you." As a footnote to this matter, I would like to share with you a comment I heard from a leading personnel recruiter. Referring to the multiple discharges of scientists and engineers at the beginning of this decade, he said, "I know many chemists were involved in those layoffs, but I didn't know many good chemists who remained unemployed for very long."

Public — Our society today is extraordinarily interrelated with science and technology. Our citizens are confused and, perhaps, a little scared by the products of our high-technology industries, particularly the chemical industry. At the Eurochem Conference on "Chemical Engineering in a Hostile World," Mike Mullins of Esso Chemicals reported his assessment of the problem: "In the public mind the word 'chemical' spells danger, and chemical events are highlighted in the newspapers, on radio and television. There have been incidents that have had a frightening potential and have understandably received serious cover in the media, but many of the events are very minor and present no real threat, yet receive the same emotive publicity." (2)

As mentioned above, our prime responsibility is to be professionals. As professionals in industry, we must accept a responsibility that goes beyond our direct area of employment. I know many in this room share the view that a scientist has an obligation to help his fellow citizens understand the results of his science. That includes providing aid to our elected representatives at all levels, aid to the media and to our neighbors. But we have to do more than just offer to lend a helping hand. Our industry needs better regulations, and the public deserves more accurate and balanced reporting. In recognition of the polyolithic nature of the political system and the pressures on reporters, we won't achieve high standards unless we demand them.

I don't want to give the impression that there aren't well-intentioned and well-informed lawmakers, or that the press intentionally distorts the facts to make a news story (although I do wonder at times). The key point is what we do about it. An editorial in *The New York Times* included this statement: "The problems facing an industrial nation cannot be effectively attacked unless those responsible for the political decisions have instant and continuing access to the best scientific and technological advice." (3) I had the privilege last year, as Chairman of the Council of Scientific Society Presidents, of being a guest participant on the two White House Science and Technology Advisory Groups chaired by Dr. Ramo and Dr. Baker, and I can report that on several occasions, reference was made by the members of the groups to the inadequate participation of the scientific community in such activities and to the need for increasing participation from the industrial sector.

I'd like to take just a minute to comment on why I believe more industrial scientists are not involved in government assistance. First, the lines of communication between government and the industrial scientist are not very well established, certainly no where near the close relationship which exists between government and the academic community. Second,

far too few industrial scientists have developed the habit of participation. Third, too few companies support the idea. Fourth, the lines of communication between the scientific societies and their industrial members are also not well established. I believe this is true even for the American Chemical Society where industrial members outnumber their academic associates.

What can be done about the problem? First, as Henry Hass said in his Perkin Medal Address, "One thing that is needed is a far greater public relations effort on the part of the chemical industry." (4) Second, we can convince industry to support the concept of participation. I believe that enlightened management today recognizes the fact that participation of their technical personnel in the government advisory apparatus ultimately benefits all concerned. However, few companies have made this a stated policy. We can also convince industry to support active participation of their scientists and engineers in their professional societies. One of the ways government can identify needed experts is by turning to the societies which serve the disciplines involved. These concepts are not without some support now. For example, Mr. Norman A. Copeland, Senior Vice President at DuPont, has written that, "In my own company scientists are encouraged to participate in professional societies and many have served on professional committees. Some, too, have been called upon to assist members of Congress and their staffs in the writing of new legislation. There is some risk in this contribution," he added, "since business critics too often read undue influence into this kind of assistance." Other company executives have voiced similar support, but the number is not large. (5)

Of course, corporations as such keep a close eye on Washington. Today, more than 70 chemical companies have official, full-time governmental relations departments in Washington. But, for the most part, that doesn't affect the discussion on responsibilities we're having this evening; for what we're talking about is industrial scientists and engineers influencing policy, helping to provide for better regulations on industry, and helping to educate the public to the advantages or disadvantages of chemicals. In my view, having scientists or their structures influence policy is more a promise of things to come than an established tradition. Nevertheless, we must try to explain the concepts of science; that we are almost always balancing a benefit against a risk; that there can, in fact, be no progress without risk; that nothing can be proved safe; and that terms like "shall not contain", "free-from", or "zero" are meaningless, since they only represent the state-of-the-art in analytical chemistry.

Employer Some would have us believe that there is an inherent conflict between our responsibilities to our employer and our several other responsibilities, some of which I have just mentioned. I do not share this view. Some would have us believe, to quote David W. Ewing, that, "The employee sector of our civil liberties universe is more like a black hole, with rights so compacted, so imploded by gravitational forces of legal tradition that, like the giant black stars in the physical universe, light can scarcely escape." (6) I do not share this view, either. There certainly are some chemists who are less than professional and who do not

give "best efforts" to their employer. There, also, have been some celebrated cases of employee abuse by the employer. In my view, the employer-employee relationship in the chemical industry is improving, though for reasons which I shall describe, neither side can claim credit.

Now, let's explore responsibilities to employers in more specific terms. First and foremost, as mentioned earlier, is the responsibility to be the very best chemist you can be. There is no conflict here, obviously. Second, there is the responsibility to anticipate problem areas for the company and be prepared to assist management by providing technical advice as appropriate. To paraphrase *The New York Times* editorial mentioned earlier: the problems facing the chemical industry cannot be effectively attacked unless those responsible for the business decisions have instant and continuing access to the best scientific and technological advice. I see no conflict here either. This has always been true, but is given added emphasis by the new dimensions being added to management responsibilities in the chemical industry.

What are some of these new responsibilities of management where chemists will be required to lend a hand? In the first place, there is an avalanche of government regulations with which the chemical industry must now contend. While few would argue with the intent of most of these regulations, compliance is a drain on management time and effort, and help is most welcome. In the second place, the long arm of the law now extends far beyond the umbrella of corporate protection.

Here is one good example: Last year there was an explosion in a chewing-gum factory in New York. The parent company and four "executives" were indicted subsequently on charges of reckless manslaughter and criminally negligent homicide. I think it is instructive to note that the so-called executives included a Vice President of the division, the Safety Director, the Plant Manager and a Plant Engineer. (7)

I have only scratched the surface of my topic tonight. Nevertheless, I would like to leave you with one thought. The environment for the chemist in industry is changing at a rapid pace. As a recent *Stanford Research Institute Quarterly* stated: "Ten years ago, how many would have heard of a class action suit, an affirmative action suit or an environmental suit against a company?" "Today," the magazine says, "most companies are facing one or more of these challenges." (8) It has been several years since Milton Friedman made his now-famous statement that "Few trends could so thoroughly undermine the very foundations of a free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible." (9) Much has changed in these few years. When Professor Friedman was writing his book, Henry Miller's books were banned in the United States, and a boy in Michigan was thrown out of high school for growing a moustache. Today, you can buy "Joy of Sex" and "More Joy of Sex" in the hotel lobby and moustaches are in style. The corporation's view of its role is changing, too, as is evidenced by the views of two outstanding chief executive officers: Henry Ford — "For a long time people believed that the only purpose of industry was to make a profit. They were wrong. Its purpose is the general welfare." C. Peter McColough (Xerox) — "We do not see Xerox as solely a profit-making institution. I don't want to minimize

profits but I must emphasize that we regard Xerox as a social institution as well as a business institution." (10)

All these changes in industry are bound to place added responsibilities upon the chemist. Those who suggest that this presents him with a dilemma are generating a false issue. Rather, it presents the professional industrial chemist with a great challenge and opportunity for service and leadership.

1. Weiss, W. H., "Think Like a Professional", *Hydrocarbon Processing*, April 1976, pp. 235-244.
2. *Chemistry and Industry*, July 2, 1977, p. 507.
3. *The New York Times*, November 17, 1974.
4. Hass, H. B., *Chemistry and Industry*, April 6, 1968, pp. 434-436.
5. Copeland, N. A., *Chemical Engineering Progress*, November 1974, p. 36.
6. Ewing, D. W., *Freedom Inside the Organization*, E. P. Dutton, 1977, p. 5.
7. *The New York Times*, August 19, 1977.
8. "Investments in Tomorrow", Stanford Research Institute, May 1977.
9. Friedman, M., *Capitalism and Democracy*, University of Chicago Press, 1963, p. 133.
10. op. cit. Ewing, p. 65.

Chamot: Our final speaker is Warren Muir, the only full-time federal government employee on the panel. He is a senior staff member for environmental health of the Council on Environmental Quality, in Washington.

RESPONSIBILITY IN PUBLIC POLICYMAKING

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Muir: I will speak on some broader concerns that I have in the area of responsibilities in public policy making. In June of 1973 while I was at the Council on Environmental Quality I received a telephone call from the chairman who had just talked to the President. The President called up and was very concerned with the discovery that Lake Superior was apparently contaminated with asbestos fibers which were finding their way into the water supply of the city of Duluth. In two hours, I was on my way to Duluth as the person from Washington to be on the scene.

The first thing I did in checking into the hotel was to turn on the television. The evening news was on and the public had already been informed of the issue. The news crews were interviewing various people and there was this one elderly gentleman who was asked whether he was taking any precautions and was asked whether he was concerned that the water he was drinking was contaminated with all these fibers and he said, "Oh no, I'm not very concerned at all. My wife and I don't drink very much water. We drink tea and coffee and of course we boil that."

I think that presents a not overly exaggerated description of the public perception of certain scientific issues. As far as I'm concerned, and this is the only point I'm going to make in my talk, the scientific professional's responsibility in public policy-making is to the public.

I know of practically no public policy matters, no matter how technical, which are devoid of social value judgements, and the public as a whole should make such value judgements. I'm concerned when I see my toxicologist friends cast federal cancer policy as a solely scientific issue. It is not. The diagnosis of a malignant neoplasm perhaps requires scientific judgement, but the decision to treat any chemically induced tumor, even a benign tumor, is a trigger for concern because we can't tell which will progress to a malignancy. This is a social value judgement as what is an acceptable risk and what is not. It is not a scientific judgement.

I am also concerned that we as scientists are increasingly using the language of our profession to provide a barrier for communication. I'm concerned that it serves to prevent the public, and even other professionals from understanding what a really straightforward issue is.

Over the last couple of years, I've had the pleasure of chairing the federal task force of fifteen agencies which initiated investigation at the end of 1974 into the issue of possible ozone depletion from fluorocarbons. I was impressed by the fact that the atmospheric

physicists and scientists can not communicate with scientists in the biological field that were concerned about potential effects of ozone depletion. Ultimately we had to resort to English. It was really quite an eye-opening experience. Not only were they having difficulty communicating with each other, but they were having problems communicating the issue to the public as a whole which at some point in time has to get involved in deciding whether or not the unquantifiable or perhaps quantifiable risks are acceptable or not.

I'm also concerned about an attitude which is especially prevalent among health scientists and less so among chemists, but not exclusively so. And that is that the public can't act responsibly when informed. I don't know how many times I've run into the occasion where we've found out about some occupational health issue or some environmental health issue and the first inclination of the scientists involved is, "Well, we don't want to go too far with this information. You don't want to panic the public." I ask you, when is the last time the public has been panicked to the extent that the public reacts inappropriately in our judgement to the information that's provided to them? I would argue that it's not that we've provided them with too much information, but we've provided them with too little information. I would argue that the concerns that arose over the public discussion and public airing of the recombinant DNA issue and the wide attention that received in the press, which I know a number of scientific colleagues felt was all blown out of proportion to what it warranted, was a reflection, not of the fact that we informed the public too much about the recombinant DNA issue, but that we informed them too little about other issues and hence, there was no perspective in which to put that issue.

Many people are concerned over an apparent public backlash to science. To the extent that there is such a backlash, I would argue that it's an indication that professionals, not scientists, have failed the public. Rather than moving toward scientific elitism, I suggest we use our skills and our training to serve the public in public policy-making. And to the man in Duluth who boils his coffee, let's not make pronouncements, let's inform him.

Chamot: I'll now give each panelist the opportunity to present any thoughts that were brought upon him by the other panelists' talks and then we'll open it up to questions from the floor. We'll start with Professor Jaselskis.

DISCUSSION

Jaselskis: Listening to the comments of my colleagues, I feel that the very important thing is to have an informed individual, a well-trained individual. Perhaps I should start with the general public at large, as an educator I would strive to utilize the captured audience in the college. Pre-law students who are taking pre-law know that they should learn a little about science, and thus they would be able to communicate in the same English. When I listen to a lawyer, many times I wonder what they are saying. So many lawyers wonder, again, when we are saying something to them. Or when the journalist says that sodium chloride is dangerous and flammable or something of the sort in reporting derailment of the railroad car, I shudder to think about lack of information.

Gilmont: There's only one Ph.D. with a scientific background in Congress. I'm amazed to hear a member of the government complain about language barriers with scientists; I want to ask him whether he's ever read a copy of the Federal Register. I may disagree with Senator Hayakawa on his political base, but I certainly support his efforts to getting the members of Congress and the federal agencies to speak English.

I was pleased to hear Professor Jaselskis talk particularly about flexible training because one of the comments I hear in industry frequently is the old accusation of professors training people in their own image and forgetting there is a marketplace. With the avalanche of federal regulations that I mentioned earlier, and the need to respond to more than just our science, but our total responsibilities, flexible training is something that is to be encouraged.

I'd like to give my favorite example of an uninformed member of the public. Dr. McClelland asked me to give a talk to the Delaware Section of the ACS and was kind enough to arrange for transportation for me back to the hotel. The first thing that I did upon getting into the hotel room was turn on the television. There was a newscaster from Philadelphia, the roving reporter, in a local supermarket reading labels. He was saying with a breathy tone into the microphone, "propyl galate and butylated cresol," and he was going on like this and he ended his remarks by warning the public to be on the lookout for anti-oxidants. Now, I don't know what the public is supposed to do if they see an anti-oxidant, but we have a lot of work to do to lend our assistance. Incidentally, I hear a lot of people complain about this, but I wonder how many people really sit down and write letters or call up people and do something about it.

I'd like to share one unhappy experience that I had. There was a special program on television last year on food, an hour long program on NBC, and those of you who saw it may remember the lengthy and rather heart-rending description of what happens to teenage girls who get vaginal cancer as a result of their parents having taken DES. And this followed an item which showed the DES as fed to cattle as a growth stimulant and there was obviously a correlation implied. What they didn't say was that the DES was taken by the mothers

of these girls in very large quantities for a completely different reason. It was to prevent premature abortion, in huge quantities compared to what was in the cattle, and the fact that the flesh of the cattle had never been found to contain DES. I called NBC and they referred me to the man who wrote the program and I spoke to him, and he said, "Well, you may be right. Perhaps that was unfortunate. Perhaps we had a responsibility in that area." So I said, "Are you going to do anything about it?" And he said, "Oh no, of course not. My job was to write a program and sell it to NBC. They bought it. Now I'm writing another program on another subject."

Getting to the remarks that Dr. Nixon made, I have just one question in the area of toxic substances. Was there any legal assistance or counsel at all at your conference because I think you made some statements which I think are counter to the law.

Nixon: Yes, there were several lawyers at the conference, and I don't know what particular points you have really. This was screened by the whole conference after the recommendations were made.

Gilmont: I'll tell you the point. You indicated that someone who could essentially blow the whistle to management would be fired and there are now laws that prevent firing people for calling attention to their management of certain federal regulation abuse. That doesn't mean that they won't ultimately be discriminated against, but initially they cannot be fired according to current law.

Nixon: If we could believe that every law was obeyed completely, we could have some confidence in the law. Actually, very few law violators are brought to book, so although you're right, the TOSCA and OSHA do provide some protection to the people who assist the agencies, I'm afraid that it's a little bit slow reacting in the way they lay it out. That's one reason why we're considering that some specific legal protection for professional employees would be worthwhile.

You implied that there was no dilemma here, and I say there is a dilemma. I didn't imply it, I stated it. A person who observes a violation, be it a small violation or a large violation, has to make a judgement as to whether the violation is sufficiently serious so that he should do something about it. To maintain that a person who is a "trouble-maker" is not somewhat jeopardizing his career is to be naive.

In the symposium that the AAAS put on in February a year ago on this general area of the responsibility of the industrial scientist, I had somewhat of a clash with the vice president in charge of research for General Electric. He said that the first professional responsibility of an employee is to his employer. I maintained that it was to the public and we couldn't convince each other that our points of view were not different. I think this point of view is held by many employers. As a matter of fact, the whole field of trade secrets is a sticky one because a professional employee has to make a judgement as to whether a trade secret is indeed a trade secret because many things that are classified as trade secrets are not really trade secrets. Anyway, I think that's an area where we definitely disagree.

You said something about when did the public panic and I thought instantly about Orson Wells and the martian broadcast, but

really the way the public has responded to the recombinant DNA issue has been very responsible. I think the way the Cambridge City Council handled it was very responsible. I don't think they panicked. As a matter of fact, the Berkeley City Council, which is one of the more free-wheeling city councils in the country also handled this responsibly and decided they wouldn't pass any laws, and they very rarely pass up the opportunity.

I think somebody mentioned that we need more scientists in the Congress. Really what we need is more semanticists. Another point that I might make is about regulation. I think we're getting to the point where we're getting too many regulations. And when you integrate regulations over time and space, they come out to equal zero because too many regulations are not going to be observed. But there are too many. There won't be enough inspectors, and there won't be enough understanding on the part of the people who are regulating or the people that are being regulated. One of the reasons I think that it's crucial that professional employees take a larger responsibility in seeing to it that unreasonable dangers are not visited upon the public is that this perhaps will reduce the perceived necessity for regulation. I was talking to an EPA lawyer at the conference I was at and he said, "We have to know the details of every process and every chemical operation in this country." I said, "You're mad. You don't have enough process engineers in the world to go through all that paper and tell you what the hell they mean." You have to put more responsibility on the people who are involved in the process.

Muir: I guess I get anchor position here, and I relish that. First of all, I will not defend the Federal Register at all, nor the legal profession which suffers the same communications problem, only several orders of magnitude worse. However, they've been getting away with it.

With respect to too many regulations for toxic substances, one really ought to take a look at what the regulatory rubric really is out there. Under the Clean Water Act, we currently have no regulations for toxic substances under the toxic substances provisions. Under the Drinking Water Act we have none governing any carcinogens. Under the Air Act we've got one on beryllium, one on asbestos, mercury and polyvinyl chloride—four chemicals. Under OSHA we have health standards on asbestos, vinyl chloride, coke oven emissions and thirteen carcinogens, practically none of which are produced in the country. We have the big, bad Delaney Clause, and I defy anybody in the audience to name the chemicals which have been regulated under the Delaney Clause to date. You'd be amazed. There are two insignificant chemicals which I can't name off the top of my head that have fallen under the Delaney rubric. I'm a little concerned about perceptions that the big, bad government's running around and laying volumes upon volumes upon people. If people were concerned that we're going too hard and too heavy and so forth, perhaps we can address the needs that these regulations are being developed in response to.

Next, let me switch back to academia. I came out of a university in the Chicago area here when I was in graduate school, and I must say I was disturbed at seeing some of the things that were going on there. We had

the worst occupational health setting that I've ever seen in my life. But the thing that concerned me most about the training of scientific professionals was that there was tremendous disincentive on any student who chose to expand out of the chemical field, take courses in other disciplines, attempt to get involved in environmental and/or other kinds of social area where the employment opportunities are greater than for the narrowly-defined research chemist. Research grants were being used and the definition under which the research grants had been obtained from the federal government were being used as way to force the student into a narrowly-defined pursuit of academic work and research, and many of my colleagues were browbeat and forced out of any kind of environmental activity. That was not very long ago.

Next, with respect to this discussion, I think a distinction has to be made between information that has to do with violation of a standard and the procedures for handling that, and the identification of new problems, any totally new hazards, a vinyl chloride or the like. First of all, under the Toxic Substances Control Act, and practically any other federal statute, if indeed a trade secret is involved and it's turned over to the government, it is protected under the law from general disclosure—it doesn't need to go to the *New York Times*. If it's a trade secret, it is. Also, if there is a significant risk, there is in the Toxic Substances Control Act a legal requirement on the institution to report such. I think it's the professional's responsibility to see to it that the institution fulfills that legal responsibility, and if it doesn't see to it that the law is fulfilled, it's a legal responsibility as well as a moral one, the reason being that the problem may extend well beyond the borders of his immediate surroundings. The problem may well exist in other areas of the country.

Chamot: One of the advantages of being moderator is that you have the real last word. The question of too many regulations: The Occupational Safety and Health Act has what is referred to as a "general duty clause" which in essence says nothing more than that the employer has the duty to provide a working environment that is safe and healthful. Maybe that would be a better way to go—eliminate standards and make sure the place is safe. I don't know which the chemical industry would prefer.

One other thought that struck me about the education of professionals. I think we're all pretty much in agreement that professionals do indeed have responsibilities. We may disagree slightly on what responsibilities and to whom, but in any case, there are responsibilities which go beyond merely knowledge of technical information.

At yesterday's symposium on Job Opportunities in Engineering for B.S. Chemists, there was a chemical engineer, I believe from Purdue, who outlined the chemical engineering curriculum. This is four years of college when the student is presumably maturing into an adult, devoted almost entirely to engineering courses, mathematics courses, and the like. The fellow who was outlining it almost seemed pained that there was some requirement for a few humanities courses. There was not a language requirement, for example. If this is indeed widespread, as I think it is, where is the professional supposed to develop his ethical

sense or what his responsibilities are, let alone what to do with them. If he doesn't get it in college and has to get it afterwards, that means on-the-job training in ethics, and is this really useful? Anyway, I ask those as rhetorical questions. Now let's throw it open to the audience.

Question: About fifteen years ago when I was in graduate school and we were having one of the typical weekend parties of graduate students—it was illegal lab alcohol and grape juice, one of the reasons why I think the chemistry graduates were invited to these parties—a discussion ensued about how poorly educated chemists were. All they knew was their science. And the person telling me this was working on a Ph.D. in English literature. At this time, the headlines in the news were the Sebring 500 Races and some things on the AEC and Nobel prize winners in the sciences. And I said to him, "Well, I've read several books by Nobel Prize winners and by Pulitzer Prize winners," and I named them, and I said, "How many Nobel Prize winners in the sciences have you ever read any works by?" and he looked at me kind of strangely, and I said, "Do you know of any Nobel prize winner in the sciences?" And he looked at me even more strangely. And I said, "Do you know who Glen Seborg is?" and he said, "Oh yeah, he's a race car driver."

So I would maintain that the educational aspects ought to extend more than just to the scientists being educated in the Liberal Arts, but also to the people in Liberal Arts being educated in the sciences. And that's going to take care of your problem of people making ridiculous statements in the press about chemicals and their safety and their effect, and it's going to help communication of the scientists with the rest of the community.

Question (new speaker: I'd like to take issue with one particular point. It was said that chemists may become unemployed, but a good chemist doesn't stay unemployed for very long. I think this becomes a threat to the older chemist who considers what action he may or may not take in conjunction with his responsibilities. The fact of the matter is, among the replies (to an ACS questionnaire) from multiple terminees in 1975 and 1976, 55% of them were forty or over. That represents an increase of 31% over the six years preceeding. We also know from the same kinds of data that the proportion at any given length of unemployment, six months, twelve months, eighteen months, whatever, the proportion of those forty and older goes up exponentially. So the older chemist is indeed, as I judge from these numbers, becoming more and more involved as a victim of multiple terminations on one hand, and secondly, the older chemist will have a proportionately more difficult time than the younger chemist in gaining re-employment. I think these are pertinent things that need to be faced, and I think they are faced by the older chemist, forty and older, and of course a large majority of our membership is in that category. ACS is not a young people's society as we find when we look at the demographic make-up. . .

(Discussion of regulatory details omitted—editor).

Chamot: Whether or not the company has to provide information to the government is a matter of regulation and law, not really a matter of professional ethics. What about a situation where a chemist or professional knows company trade secrets and believes there is a health problem or a safety problem, for example, which is not known outside the company. These are really the kinds of questions here. What obligation or what responsibility, what duties does this individual have if he sincerely believes he is correct and his management disagrees?

Gilmont: I'm glad you raised that question because, first of all, the implication has been made by two people tonight that the chemical industry is not safe. I would like to compare the safety record of the chemical industry with any other industry. The record is very safe, and I could say the same about the health record. Now, health incidents have come up where new data show there is a hazard and there's no way to protect against that. On the other hand, Dow Company submitted a report to the government in 1962 calling attention to health hazards from vinyl chloride and these did not actually become a government interest for fourteen years thereafter. So it works both ways. Now I don't mean to imply there haven't been abuses in industry—of course there have and there have been some rather famous ones, but industry's record is really pretty good. And I know when we have our OSHA inspection in our plant, we're not unhappy to see the man from OSHA come around because he's got some standards and some drawings and some other things that are quite useful.

Question: I must confess that I was not aware that I would be assisting here at a meeting where so much emphasis is being put on the virtues of American industry and so little concern shown about the employee. And I have found a lot of comments expressed by Dr. Gilmont very, very offensive actually. I have been active for the past five years on the Professional Relations Committee of this society. We have heard of cases of chemists who have been mistreated in professional employment. Very often the mistreatment was based on a concern about safety and conflicts arising from that. It is really a nineteenth century idea, the concept that industry can do no wrong, that the only responsibility of the employee is to be okay with his boss and everything will be all right.

The quotation that Dr. Gilmont made that good chemists don't get unemployed for long! I just happen to have heard it in the place where this man was executive. I was interviewing there in a team of people who had time to pick up the pieces after one of the main layoffs. It was a situation where this executive was known to have his Friday 5 o'clock firings every year or every six months. He was just taking the bottom layer or whatever he considered to be the bottom layer and then dismissing them. So this whole aspect of employment and employer/employee relation belongs to—I really don't want to offend the nineteenth century because there were great things happening in the nineteenth century as well.

We went a long way in our activities at CPR, and I think American industry is not all bad, but it can be good only if the employees of this industry have a freedom to interact both with the public and with industry. This is a Pollyannish attitude that

the only responsibility is towards the industry and not towards the public and that there are actually no conflicts, no conflict between the employer, who basically wants to make money as fast as possible with shortcuts if he can, and the employee who in his scientific training is aware that something doesn't smell good in this area and he would like to do something.

One of the comments I have heard about TOSCA is how TOSCA might hurt the industry by the revealing of company secrets. I have not heard the word yet about what is being presumed, that TOSCA will be protecting the employee. We don't know about that yet.

Gilmont: I'm sorry if my remarks were offensive. I must say without trying to be offensive that I get the distinct feeling that you didn't listen to everything that I said because in no way in any of my remarks did I indicate that the employee's primary responsibility was to the employer. The emphasis, I said, of the employee in industry was first and foremost to himself and to maintain his competence as a scientist. I indicated and gave substantial time to the responsibility of the industry employee to government, and indicated in fact that at both the state and local levels as well as at the federal level, the industrial employee is in a unique position because he can lend a hand and furthermore, I said he shouldn't wait to be called upon. He should demand high standards.

Now there's a statement made by a letter to the editor of July 16th issue of *C & EN* by an R. Weiner of Hoffman States, Ill., where he says that "Because the individual company members of the food, drug and cosmetic industries," and he includes all three industries, "threw indiscriminate poison at the public." Now that kind of irresponsible remark shows that we don't keep our own house in order.

Jaselskis: The question has been raised by the students in fact pertaining to the so-called layoffs and certain difficulties, and sometimes we have to grope for possible answers at the academic level because some day those students will face similar situations. In general, it appears to me, that at least on the outside, many times, the management is interested in a product, the salability of a product, over-production, over-employment let's say, in good years when government sponsored so many Ph.D. chemists to be hired by industries who did not need them, and all of a sudden grants diminished. These people became an excessive burden; they had to be fired, and they were fired. But I think the image should be posed even to the young people that we value the people more than the goods. Sometimes there is a slippage and we have heard so much that we value the goods more than the people. While this cloud exists, those questions have been raised.

In fact, if you are involved in a car accident, judgement and getting your money back is so much easier than if someone knocked your teeth out on the street. If you went on the street and got your teeth knocked out you might get nothing because someone might argue cleverly that you provoked the attacker, and consequently, no compensation. So this is the type of thing in our legal thinking and philosophical thinking than deeper human problems because we value the material we protect very distinctly, it seems to me.

Chamot: We've talked a bit tonight about layoffs, which is again outside the scope of the symposium, but I do have a question that does relate to that which I'd like to try on the panel. What is the ethical responsibility, shall we say, of a chemical supervisor who knows that a good chemist is being fired by someone above him for reasons that have nothing at all to do with the man's abilities as a chemist? And I think several people know of examples. It's really not a hypothetical question.

Gilmont: I don't know how to defend that one because if that happened in my company, I'd raise holy hell. I don't know about other companies, but I know in my company I'm allowed to raise holy hell, and I do it at regular intervals.

I'd like to make a comment partially in support of something Alan Nixon said. The comment has been made about what happens if someone in industry finds that there's a violation. I've found it rather interesting to go around and talk to people and see how many people know what a violation is. And I'd be interested in how many people in this room, for example, have read the Toxic Substances Control Act, have read the Water Pollution Control Amendments of 1972, have read the Clean Air Act of 1970 and how many would recognize a clear violation of OSHA if they saw one.

Question: I'd like to comment on something that Dr. Nixon said and something the gentleman on my left said about over-regulation and the effectiveness of over-regulation and how society treats people. We had an incident in my own institution where a woman felt she was discriminated against as a woman and brought various actions with federal agencies against the institution and so on, and the net result of all of this was the woman was fired, and she was not fired because she was discriminated against. The institute was able to come up with incidents to show that she was not perhaps as cooperative as she should have been and so forth. We went through quite a bit of this with lawyers, and the upshot seems to be that even in an instance where there's a lot of laws for protection against discrimination, the bottom line is that no employer is required to keep an employee that they don't want to keep and they'll find some way to get rid of that employee, and this was the opinion of a lawyer that was associated with the AFL-CIO. There's very little at the end that can be done. This went through the courts and the judge decided for the institution and the employer. Instead of saying we need a philosophy instead of saying that the employer doesn't have to have anyone he doesn't want to have, maybe we have to change this and say the employer has to justify more rigorously the firing of an employee.

Nixon: I agree with you entirely, but unfortunately, it doesn't matter how rigorously you write a law, it often comes down to which side has the smartest lawyers, which has the more money to pour into a case. Now take the Sharon Johnson case which was just recently decided in favor of the University of Pittsburgh. The University of Pittsburgh spent \$330,000 on that case, and when I testified, they had three lawyers in court. They were pouring money into that case as though it was for free. I guess it was — it was coming from the state. But there's no way you can legislate

against that sort of thing. What you are hoping is that by having laws which aim to protect people, that on the average, people will be treated better. And so you'll ameliorate the situation to some degree.

Recently the law against age discrimination seems to have been seriously breached in the case of *Rogers vs. Exxon*. After five or six years, the jury decision was reversed by an appeals court. By this time, Rogers was dead and I guess his widow was getting pretty shakey. And I guess that's the way all these age discrimination things could be broken by dragging them out so long that the people who are discriminated against die.

Gilmont: I'd like to respond to that because that's a very important question. In preparation for this session, I took the time to try to find out what the law is with respect to the relationship between employer/employee where there is no contract. Where there is no contract, there is no law which protects the employee from being fired without cause whatsoever. In fact I found an interesting case where one employee was fired for cause, and he was fired for three reasons and he took it to court and the court found there were not three valid reasons and forced the employer to re-hire him. Ninety days later he was fired without reason and the court said, "You have no case." *(The law does prohibit discriminatory action, including firing, taken against an employee based upon such things as race, sex, age, union activity, or complaining to OSHA. So long as no such discrimination is involved, Dr. Gilmont is quite correct — editor.)*

But there is another side to this issue and that is that while the employer has the absolute right without a contract to fire any employee without cause, it is also true that any employee can leave the employ of any employer without cause and without notice, and that point has not been raised this evening. I want you to know that as an employer of chemists, that has been a subject of severe concern to me recently, particularly with younger chemists who seem to have a little more wanderlust or something. You take them on board and spend a lot of the company's money training these people and they come in one day and say, "Well, I'm going to dental school," or, "I really wanted to go to medical school all along," or, "My wife wants to move to La Jolla and I'm getting a job out there," or one thing or another and you're left high and dry, so there is another side to the issue.

Chamot: I think I'll use my prerogative once again as chairman and have the last word. The bulletin of this division some time ago published a re-print of the results of a survey that was run by the magazine *Industrial Research*, and which was responded to by about 1,000 of their readers. I'd like to read the questions and results of two of the questions. The first, "Can you speak your mind about management without fear of reprisals from your present employer?" Yes — 49%, No — 51%. In other words, about half the people felt they could not speak their mind without fear of reprisal. And the other question was, "Have you ever been fired as a result of having expressed your views?" Not just punished, but "Have you ever been fired as a result of expressing your views?" Thirteen percent said Yes. On that happy note, I'd like to thank very much the excellent panelists here today.



AMERICAN CHEMICAL SOCIETY
Division of Professional Relations

THE MEMBER ORIENTED
DIVISION

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The Individual's ACS Division

The Division embodies interests of all professionals in the practice of chemistry. While other ACS Divisions represent scientific disciplines, the Division of Professional Relations represents chemical professionals themselves. It is thus the cohesive binding force of all chemists by representing their interests as people.

The objectives of the Division are: to represent its membership and to inform the general membership in professional rather than scientific matters; to increase awareness of members and to influence Society policies on professional matters through the organization of appropriate programs, conferences, and discussion groups; to assess member opinions on professional matters and to make this information available to Society members through appropriate means.

Programs of the Division are divided into three areas:

- professional concerns
- public concerns
- personal development

In the first area, symposia have been held at national meetings on ACS professional relations activities, on innovative local programs, on guidelines for employers, on unionization, on licensure, regulation

and certification, on legal rights and professional responsibility, on new venture businesses, and on OSHA.

In the second area, symposia on government incentives for research and development and on the state legislative process have been held.

In the third area, symposia on the development of professional attitudes, on careers, on professional capabilities, and on human values in science have been held. From these sessions articles have appeared in *C&ENews*, in *CHEMTECH*, in *The Chemist* (a publication of the American Institute of Chemists), in the OCAW Professional Advancement, among others.

At the ACS National Meeting in New York a special symposium on the unique legal problems and responsibilities of chemists was sponsored by the Division. Patent rights and professional liability problems was only a part of this diverse discussion. A book is planned to assist chemists in this complex area at the science/law interface.

We also have member committees on legislation, on OSHA, on professional practices, on member communication, and on personal development. They provide a unique opportunity not only to work

toward vital goals but also to meet otherwise inaccessible colleagues.

The coverage of our quarterly, the *Professional Relations Bulletin*, has been expanded and we've published definitive articles on science in the state legislative process, on occupational health, and on safety, to name a few.

The Division is the member leader in the ACS professional relations process. It cooperates with and invites cooperation from all interested ACS units and individuals. It should be clear that a lot has gone on behind the scenes. Many things have happened because of, or have been helped by, our existence. Through the Division, chemists can ensure that their Society is responsive to the needs of chemists.

We welcome your participation. It provides an opportunity to get involved with a whole spectrum of people, to meet people with stimulating ideas, to grow in personal stature as professional chemists, and not least you can sharpen your interpersonal relations skills here long before your employer gives you a chance to. Payment of \$4.00-per-year dues will start the process for '77. Send it to Division of Professional Relations, PO Box 286, Rahway, N.J. 07065.

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