

## **CHAPTER FOUR: EDUCATION AND CAREER DEVELOPMENT PROGRAMS**

This chapter discusses programs for employee career development at three agencies: the National Agricultural Statistics Service, the Bureau of the Census, and the Centers for Disease Control and Prevention. Career development programs provide a structured approach to human resource development. These programs are designed to address a broader set of skills than those necessary for a specific work assignment. Often the career development programs combine training, on-the-job work assignments, and education. The NASS program has components of all three HRD activity areas: training, education, and development. Two BoC programs are discussed; one is an education program, the other combines training with career development. The CDC program's primary focus is career development. Participation in some of the programs provides employees with a competitive promotion advantage.

A career development program may be broad-based, as is the NASS program, or may be designed for specific groups of employees. Such programs are generally targeted to employees in the first five to eight years of their career. The three programs examined have the goal of preparing their employees to be more effective in performing the work of the survey organization — work for which traditional academic study provided no adequate preparation. Although intern programs have been in existence for many years, the programs examined here were the only career development programs at federal statistical agencies on which the subcommittee received information,

### **1. National Agricultural Statistics Service**

NASS has designed a formal program of career development and training for all its professional statisticians and computer programmers. All employees have Individual Development Plans (IDPs). IDPs are standardized for each professional series, but afford an opportunity to provide individual training options. The agency has developed a formal week-long orientation program and a series of agricultural survey and estimation training programs for all its statisticians. These courses cover specifics of agricultural survey design, data collection, and processing at several experience levels. Since 1960, NASS has long supported a program of full-time academic training at the graduate level for mathematical statisticians, computer scientists, and survey methodologists.

NASS recruits and trains entry level professionals mostly in its 45 State Statistical Offices (SSOs). Its career development and training program is designed to progress entry level statisticians (GS grades 5-7-9) to Senior SSO Statisticians (GS-12) in a substantially noncompetitive environment.

NASS is the primary statistical agency in the Department of Agriculture. The agency needs employees who have broad agricultural experience combined with special skills in survey design and administration, knowledge of data analysis and estimation procedures, and computer data processing. NASS's training program is designed to develop and improve the individual's knowledge, skills and abilities while enhancing the overall agency performance. All professional employees participate in a broad-based training and work program that introduces them to several disciplines and possible career paths. NASS expands this broad-based training with a number of competitive formal training opportunities designed to fill highly technical and specialized positions critical to the organization.

NASS has tailored its program to the skills of the majority of individuals recruited and the NASS career path opportunities available. NASS employees are hired either as a GS-7 with a Bachelors degree or as a GS-9 with a Masters degree, and classified in one of three job series: agricultural statisticians, mathematical statisticians, or computer specialists. All employees must meet the minimum requirements of a Bachelor of Science degree. Agricultural statisticians must have at least 15 semester credits of mathematics and statistics, of which 6 credits must be statistics, plus 9 additional credits in other physical or social sciences. Experience in agriculture is very desirable. Mathematical statisticians must have at least 24 semester credits in mathematics and statistics, of which 12 must be mathematics and 6 statistics. A Masters degree in mathematics or statistics is preferred. Computer specialists must have 30 semester credits in computer science and mathematics.

Each new employee has a non-competitive career path to the GS-12 journeyman level. The length of the training from entry to journeyman is about 6 years. Generally, progression to a grade 12 position requires reassignment to a second office. Once the GS-12 journeyman level is reached, statisticians are expected to have a working knowledge of agriculture, an understanding of statistical concepts and applications, the ability to conduct surveys, be skilled in the use of basic computer software, and be able to operate in a LAN environment. They are also expected to have the ability to write and speak effectively, be able to plan assignments, and delegate work. During this training period each person will be offered the opportunity to be cross-classified in either of the other two job series.

**Noncompetitive Career Development Program.** The NASS training program consists of a non-competitive core training program and competitive training programs available for employees seeking a GS-13 or higher career level. A description of each of the chronological steps for *noncompetitive career development and training* for new professionals at NASS follows.

*Office Orientation.* Each office conducts a basic job orientation during the first two weeks of employment. The employees study materials on the agency mission and its history. They review agency and office policies and administrative procedures and they are trained to use their computer workstation as well as getting acquainted with the LAN operations. They are given their first work assignments and their performance elements and standards on which they will be evaluated.

*Individual Development Plan (IDP).* Each individual starts with a generic IDP that prescribes all the basic elements required to reach GS-12 — along with the career goals and aspirations of the individual. In addition, the supervisor and employee are to specify training and development needs that meet the employee's objectives and are in accord with the agency goals and staffing needs.

*Headquarters Training and Orientation.* Groups of new employees come to Headquarters for a week of training. This generally occurs sometimes between the sixth and fifteenth months of employment. The employees receive an overview on all aspects of NASS survey and estimation procedures, and participate in an Agricultural Statistics Board simulation. They are also given a briefing on current research activities and computer operations. They become acquainted with the Headquarters environment and meet the Headquarters staff, as well as meeting with top management in a question-and-answer session.

*On The Job Training.* Learning while working is the most important element of NASS's training program. Opportunities are provided to travel with the state office managers and senior statisticians to agricultural meetings, field days, and commodity meetings. These meetings help increase their knowledge of agriculture and acquaint them with the agricultural industry. They are given assignments requiring them to conduct survey interviews and do crop observations. Their workloads and responsibilities are gradually increased in accordance with their performance and promotions. They generally work in their first state office for at least four years, and during this time they are expected to have different assignments in at least two of the three major functional areas of responsibility which are surveys, estimates, and systems services.

*Basic Concepts Training.* All new statisticians attend formal training sessions on NASS survey procedures, estimates and analysis, and yield measurement. These are usually four-day training sessions conducted by the Headquarters Survey Training Group. Basic concepts are taught and everyone is expected to know and understand these basics regardless of their current assignments.

*Advanced Survey and Estimation Training.* Statisticians who have completed the basic concepts and are assigned major responsibilities for either surveys or estimates are provided formal training on specific topics. These are usually four-day sessions conducted by the Survey Training Group. This training is directed toward specific actions and programs that are designed to give the participants the knowledge and skills to perform these activities at the full performance level.

*Special Survey Training.* Statisticians assigned to work on specific surveys are sometimes provided with additional training specific to that survey. This training covers all topics involved in conducting the survey including list building, sampling, questionnaire design, training of enumerators, data collection, editing, data analysis, summarization, and publication. This training is directed to complex surveys such as objective yield, environmental, or economic surveys.

*Senior Statistician Workshops.* When a statistician reaches the journeyman level, they are often designated as the technical leader for state office operational groups: survey data collection, survey estimation, or computer survey support. Periodically, training workshops will be held for each of the operational group with individuals from all or a group of state offices. These workshops emphasize project planning, coordination of office activities, and overall project management. This training involves sharing of ideas and interaction among participants and Headquarters technical leaders.

*Professional Training.* Statisticians are encouraged to engage in professional training opportunities such as college courses, seminars, toastmasters, and self-development training provided by local institutions or the NASS Headquarters resource library (videotape training). NASS pays the fees for this training, provided the training is related to the overall mission of the agency. Training may be done on work time or on the individual's own time. The IDP is used to identify specific employee training needs and indicate appropriate professional training.

*Pre-supervisory Training.* A specially designed course has been developed by the USDA Academy at Texas A&M University to meet the unique needs of NASS statisticians and computer specialists at the grade 11 or 12 level. Training topics include values clarification, workplace diversity, stress management, effective meetings, presentation techniques, team building, communication, change, and ethics. In addition, NASS requires all of its statisticians and computer specialists to attend at least 80 hours of supervisory/management training prior to becoming a supervisor.

*Mathematical Agricultural Career Enhancement (MACE).* The MACE program is a combination of "on-the-job" and formal educational program designed to permit agricultural statisticians to become cross-qualified as mathematical statisticians and mathematical statisticians to become cross-qualified as agricultural statisticians. Applicants accepted into MACE will complete the portion of the IDPs for both the agricultural statistician and mathematical statistician required for classification in the respective series. This program formalizes agency sponsorship of academic courses for an individual selected to develop skills in both job series.

*Computer/Agricultural Career Enhancement (CACE).* The CACE program is designed similarly to the MACE program but permits computer specialists to become agricultural statisticians and agricultural statisticians to become computer specialists. Applicants accepted into the CACE program complete the portion of the IDP's for both the agricultural statistician and computer specialist required for classification in the respective series.

**Competitive Training Programs.** When NASS professionals have completed their first year and are making satisfactory progress on their IDP, they have the opportunity to apply competitively for any of three tracks in the *Full-Time Graduate Education Program* or the *Career Development Intern Program*. These programs are described below.

*Full-Time Graduate Education Program.* To be eligible, employees must attain the GS-9 level with at least one year of experience and be performing in a superior manner with satisfactory progress on their IDP. The full-time training programs provide at least one year of graduate level academic training. Agricultural statisticians, mathematical statisticians, and computer specialists are competitively selected for these training programs and, upon successful completion of the training and fulfillment of the OPM-required years in each grade, are placed non-competitively in GS-13 Headquarters positions. Selected candidates are given a new IDP which include any "warm-up" courses required. They are generally relocated to an SSO near a university with a NASS-approved graduate program. They must meet the qualifications for admission to graduate school at the selected educational institution in question.

The full-time graduate level training programs are:

**N** *Mathematical Statistician:* This program is designed to provide education for agricultural and mathematical statisticians in advanced statistics and statistical theory to become highly-trained mathematical statisticians.

N *Information Technology*: This program is primarily designed for computer specialists to provide training in software engineering, telecommunications, or management information systems. However, the program is open to agricultural and mathematical statisticians who have a strong interest and background in computer systems and information technology.

N *Survey Methodology*: This program is designed for agricultural statisticians and mathematical statisticians to receive advanced training in survey methodology. Participants attend the Joint Program for Survey Methodology at the University of Maryland.

*Career Development Intern Program (CDIP)*. The CDIP program is designed to provide accelerated training and career enhancing experiences for agricultural statisticians in state offices. The training program is designed to prepare statisticians for specific assignments in Headquarters at the GS-13 level. Agricultural statisticians can apply as GS-11's when they are expecting a relocation to their second state office assignment. They will be expected to maintain a full workload assignment in the SSO and complete all the IDP requirements for the GS-13 position targeted.

**Impact of Career Development Programs.** NASS does not formally evaluate and measure the results of its career development programs. An informal assessment would indicate that the current programs have been successful. Most NASS employees are hired as college graduates without previous work experience in statistics, without graduate level statistical or survey methodology skills and knowledge, and, increasingly, without an agribusiness background. After they complete their career development programs, NASS employees are able to successfully carry out the organization's mission which requires them to do sophisticated statistical tasks.

As of 1995, 122 NASS employees had completed full time training, and 62 were still employed. Of those who had left, many had retired. (*Clark and Schuchardt*) In 1997, there were 23 participants in formal training program activities.

NASS has experienced many positive results from its career development approach, both on an individual level and an organizational level. Such benefits include:

N Increased communication across the agency as statisticians network and exchange information taken from training and other developmental events.

N Rotational assignments provide statisticians with broad range of experience and knowledge about commodities, estimates, etc. nationwide, exposing them also to various management styles of State Statisticians and Deputy Statisticians in SSOs in which they work.

N Increased pool of highly qualified staff to fill vacancies nationwide (SSOs and HQ).

Even an excellent program produces some concerns and misgivings in the course of its generally beneficial career development approach. Unexpected outcomes experienced by NASS include:

- N New statisticians are less willing to participate in rotational assignments when they upset dual career families and exacerbate other personal difficulties. This creates new hiring and retention issues.
- N Identifying development/promotional opportunities in SSOs is challenging when talented statisticians decide not to accept rotational assignments. This also creates morale, retention, and career development issues for other individuals in those offices.
- N Some uncertainty exists about specific future agency staffing requirements being effectively met by using today's career development approaches.
- N Ever-decreasing resources and increasing work demands prompt NASS leadership to ask: Do current career development approaches enable individuals and work units to do more with less? This situation raises productivity issues.
- N With many rapid changes occurring in the field of agriculture, the statistician's work, and technical support systems, NASS must ask: Is our generic IDP current? Who ensures the IDP's developmental tasks are always current and appropriate? Similar challenges exist for in-house survey and statistical training; these and related questions indicate currency and relevancy issues.

NASS's training program to the journeyman level is designed to provide each professional employee with broad-base training in agriculture, statistics, surveys, and computer science. This gives all employees the opportunity to choose the career path most suited to their skills and abilities, but also offers them the opportunity to switch career paths. Everyone receives similar training and career development opportunities, allowing them to compete for competitive technical positions at the GS-13 level in Headquarters and for supervisory and management positions after a Headquarters assignment.

This program has been very successful in providing NASS with a highly trained staff of agricultural statisticians while at the same time providing a source of specialized mathematical statisticians and computer specialists who have state office experience. Despite the concerns, NASS management strongly believes that the current developmental plan has benefitted and will continue to serve the agency well by providing a broadly experienced and knowledgeable group of statisticians who will be able to meet the present and future organizational challenges.

## **2. Bureau of the Census**

The Census Bureau has designed two staff developmental programs directed toward the goal of training and retaining highly skilled staff. In the Census Bureau, statistical employees engage in a variety of training opportunities that provide both technical and nontechnical skills development. Two such programs are the Joint Program in Survey Methodology (JPSM) at the University of Maryland and the Census Bureau's Mathematical Statistician Intern Program.

In addition, for technical skills training, the Bureau employees may participate in any combination of the following options:

- N college and university courses,
- N outside seminars through private vendors, and
- N participation in American Statistical Association and Washington Statistical Society events.

For nontechnical (or soft skills training), employees may attend any in-house course on such subjects as: Public Speaking, Effective Presentations, Writing for Results, Managing Time and Stress, Teamwork, Problem Solving and Decision Making, Customer Services, and other such courses.

Except for the trainees who attend courses at the JPSM, Census employees normally do not complete an Individual Development Plan. Training at non-Government sources has to be job-related but the documentation indicating so is typically a short sentence on the individual's training application. Any training activity which requires employees to compete in order to be selected does, however, require a formal training plan.

**Competitive Career Development Programs.** The Census Bureau has developed two competitive programs for statisticians and mathematical statisticians. These programs are Census Bureau sponsorship of staff enrolled in the Joint Program in Survey Methodology and a Mathematical Statistician Intern Program.

*Census Bureau Participation in JPSM.* The Census Bureau saw the JPSM as an opportunity to have staff trained specifically in statistical and social science methodology used for large-scale economic and demographic surveys. Since the program began in September 1993, the Census Bureau has competitively selected six employees each year to start the program. In addition, several staff are supported in taking one course a semester. Also, the Census Bureau has actively participated in the numerous short courses offered by JPSM. Attrition from the program has been occasioned by personal circumstances: one person took maternity leave, one went to another federal agency, and one decided that the program was not a good fit for her circumstances.

There is a commitment and burden on the organization to have a valued employee engaged in only half-time work for about three years — and to pay their full salary during this time along with tuition, books, and local travel. There was much discussion as to whether and to what extent the Census Bureau could afford such an investment.

In the case of the JPSM, it is probably too early to say if the Census Bureau has made a good investment. Some may say that the proof is that staff members selected for the program are now graduating and staying with the Census Bureau. All students sign a commitment to federal employment equal to three times the amount of time released to take courses. At this time no student has repaid that commitment. Others may say that the graduates will have to contribute significantly for many years before there is proof of success. How one might recognize and evaluate "significant contributions"

constitutes a separate problem. The students are pleased with the quality of their education and enthusiastically support the program. The students report that they come back to their jobs with new insights and techniques to apply to their work. It is also very clear that they are effectively networking amongst themselves and with students from other agencies. These staff members are eagerly sought by Census Bureau managers to fill vacancies and to accept positions of further responsibility

*Mathematical Statistician Intern Program.* The Census Bureau started this program in 1993 at the same time the JPSM began. The two programs were seen as complimentary, even though they appeal to two different staff universes fulfilling two different missions. The participants in the Intern Program already have a Masters Degree (or have completed several graduate-level courses). The general profile of the participants has been: staff who have had five years or more experience at the Census Bureau, who had worked in only one division, who were about 30 years old, and who were generally recognized as the best in their peer group. Competition for one of the four intern positions selected each year has been intense.

The Intern Program was established with five objectives:

- N Identify staff for the fast-track to the GS-13 level and perhaps later management assignments.
- N Provide exposure to each of the Census Bureau program areas — economic, demographic, decennial census, and statistical research.
- N Provide opportunity for statistical assignments that require different areas of knowledge.
- N Provide opportunity for professional growth through formal paper preparation and presentation in a professional forum.
- N Provide enhanced training opportunities to meet career goals.

The program has the following features:

- N Competitive selection — which has involved intensive group interviewing by the Associate Director for Methodology and Standards, the methodology division chiefs from each of the four program areas, and a division chief selected each year from one of the program areas.
- N One-year assignments in each program area where the intern has not had experience. With four program areas, the Intern Program normally lasts three years.
- N Presentation/participation at the annual ASA meetings. This is an important benefit since competition to attend ASA meetings is very intense among other staff. It is assumed and expected that interns will prepare a paper and go to the meetings.



- N Each intern is assigned one of the division chiefs from each of the four program areas as a mentor. Regular meetings are held between the intern and the relevant division chief, and individual development plans are prepared.
- N Increased exposure to senior staff. Quarterly meetings are held for all interns with the Associate Director for Methodology and Standards and the methodology division chiefs from each of the four program areas. Usually a member of the Executive Staff is invited to attend also and talk about a particular program area.
- N Increased training opportunities. With the crunch on training funds during the past few years, this has proven to be a valuable benefit of the program, as interns have been given priority for training money. Numerous JPSM short courses have been taken with these training funds, along with courses related to personal development.
- N When rotated to another area, the interns have been given priority for assignments that can be completed within a single year and that lead to preparation of an ASA paper.
- N Experience in working as a group on a broader management or organizational problem. For example, the interns recently worked together to prepare a proposal for reorganizing the utilization of Census Bureau mathematical statisticians.

Those employees selected for the program have, in general, been satisfied with the opportunities and experience that the program provides. The interns have benefitted personally from their assignments, the training opportunities, and the mentoring that they have received. In addition, there are the benefits of increased communication across the Census Bureau as the interns band together for numerous networking opportunities, taking back to their respective branches news from across the Bureau. For example, they have regular luncheons without senior management involvement.

Through rotational assignments, this program has the capacity to give interns their first opportunities to obtain supervisory experience. For several reasons, this has not materialized. The interns are, however, seeing and taking notice of the various management styles they are being exposed to, and these differing styles are discussed and compared during their informal meetings. Another positive contribution of the program is the increased pool of highly qualified staff to fill technical and management vacancies. Not all interns have stayed in the program long enough to experience three assignments. However, those leaving the program have left for permanent assignments within the Census Bureau or opportunities in the private sector.

Even though senior management has been generally pleased with the progress of the Intern Program, there have been valid issues and concerns raised by Census Bureau managers:

- N When a division has a person selected for the Intern Program and that person leaves the division to start the rotational assignments, the programs of the division are affected because the divisions have not always been able to back-fill the vacated position.

- N Although most managers support the objectives of the Intern Program, several question whether the Census Bureau can support the statistical program disruptions caused by the one-year staff assignments.
- N Some managers believe that a negative message is being sent to other staff members in units that the interns are assigned to by giving the interns priority in assignments. These managers argue that there are other deserving employees in the units who should be given these assignments.
- N Some managers express a concern that the Bureau has created a caste system. They raise the following question: Will there be any promotion opportunities for the GS-12s who choose to dedicate themselves to becoming expert in one of the more complicated surveys of the Bureau, or who choose a rotation and development program of their own?
- N In the view of some managers, this focus on Census Bureau staff detracts from a proper focus on its programs, the fulfillment of which is the primary purpose of the Census Bureau.
- N Finally, from the Human Resources Division comes the concern that when the interns complete the program, there will not be permanent GS-13 positions available for them to fill.

None of these concerns are trivial; in some cases emotions run deep. When the first interns completed their three years, there was no problem in finding permanent positions for them to fill. In fact, there were more positions than interns. It can also be argued that the Bureau has taken every step possible to rotate the interns to positions of the greatest need, but that is of little solace to the manager who ends up with one less staff resource. Of course, it is true that there is always a learning curve when a new person enters any position. With the one-year assignments, there is the constant overhead of the learning curve, but senior management does not believe that this price is too high.

The issue of opportunity for those who are not a part of the Intern Program is a more difficult one. In the past year, there have been GS-13 job announcements, not filled by an intern, to which all could apply. Inevitably, there will be positions, filled by an intern, with respect to which the manager will feel that he/she was not given the opportunity to fill as desired. There will be some deserving employee, not a part of the Intern Program, who might have done quite well in that position. But all employees know about the Intern Program; all have an opportunity to apply and be selected into the competitive process. It is the belief of senior management that the Intern Program will provide a superior pool of candidates who, through broadening work experiences, will be better equipped to fill future vacancies.

**Impact of Career Development Programs.** The Census Bureau recognizes that a highly trained and specialized staff is a necessary resource to perform its functions. Creating staff development programs to train and retain these staff is in the best interest of the Census Bureau. Both of the Census Bureau career development programs are designed as three-year programs. They differ in the focus of activities during the three years. The JPSM program is primarily for those employees who do not have Masters level preparation in statistics or a social science discipline. The intern program is focused primarily on

those employees who have a Masters Degree in statistics and provides three different career development opportunities.

To better understand how training programs such as the JPSM and internship programs are perceived, the Census Bureau conducted a series of focus groups in the spring of 1998 among both supervisory and non-supervisory mathematical statisticians. The analysis of the focus group interviews demonstrated high awareness of the formal JPSM and intern programs, high value for short technical courses (such as JPSM short courses), mixed support for rotational opportunities, and significant interest in the development of a formal mentoring program.

Both programs could be viewed as a burden on the organization. Issues and concerns have arisen about these investments in the future. Yet, both staff-development programs have vital components for preparing and retaining a highly technical pool of staff — a staff resource with the technical and managerial leadership skills needed by the Census Bureau in the next millennium.

### 3. Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention (CDC) has developed the Quantitative Methods Enhancement Program (QMEP) in response to the recent emphasis on reinventing government and a need to provide alternative career development training for statisticians (Williamson and Betts). In addition, the program is designed to sustain and enhance statistical capacity within CDC. The QMEP is a career enhancement alternative for CDC statisticians and other scientists who have a strong career interest in statistical and other quantitative methods.

In a January, 1989 memorandum, the Associate Director for Science, Centers for Disease Control and Prevention, established CDC's Statistical Advisory Group (SAG) in recognition of the increasingly important role statistics and statisticians play in fulfilling the agency's mission. The SAG was asked to act in an advisory role to CDC's Office of the Director on statistical issues, to oversee and coordinate CDC-wide statistical activities, and encourage communication among statisticians and other scientists at CDC. In 1991 the SAG cosponsored CDC's Planning Retreat for Epidemiologic and Statistical Methods in Public Health to produce a plan for maintaining and developing expertise in statistical and epidemiologic methods essential to preserving CDC's national leadership role in assessment of health status and in public health practice. One of the high priority recommendations from the retreat was enhanced recruitment and retention of statisticians and data analysts with expertise in methods to analyze public health data. This recommendation, coupled with the reinvention/reengineering environment in government fostered by the 1993 National Performance Review, became the impetus to consider ways to provide positive reinforcement for CDC employees who have a strong career interest in analytic methods.

In December 1993, the SAG convened a focus group comprised of CDC statisticians, management analysts, and personnel experts to discuss and lay the foundations for an internal rotation program that might identify outstanding employees who demonstrate interest and promise in analyzing public health data. It was contemplated that they would be temporarily reassigned to another group within CDC to acquire and develop new statistical skills. During the next year, the focus group and others in CDC's Epidemiology Program Office (EPO), the group which provides personnel to coordinate and support much of the SAG activities, discussed and revised the original proposal for the methods rotation program. The resulting proposal was one which provides alternative career development training for statisticians and, at the same time, sustains and enhances the statistical capacity within CDC. In 1996, with approval and support from SAG, the Statistics and Epidemiology Branch of EPO, along with CDC's Human Resources Management Office, the QMEP was introduced.

**Quantitative Methods Enhancement Program (QMEP).** The purpose of QMEP is to provide an innovative career enhancement opportunity for CDC and Agency for Toxic Substances and Disease Registry (ATSDR)<sup>4</sup> scientists. The program facilitates professional growth and development for

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<sup>4</sup> Future reference to CDC includes ATSDR because the QMEP applies to both agencies and allows participation between those agencies.

statisticians and other data analysts, assists in maintaining and strengthening CDC's capacity in analytic methods expertise, and promotes retention of CDC scientists.

The QMEP provides CDC employees with a unique opportunity to temporarily be assigned to another group at CDC to acquire new skills in specific analytic methods from CDC experts on current statistical methods. The areas of skill development include generalized estimation, longitudinal data analysis, sample survey analysis, small area estimation, meta-analysis, neural networks, Geographic Information Systems (GIS), and risk assessment. The program consists of 1) a competitive application process that is used to match an applicant with a mentor, 2) an internship training period, and 3) an evaluation of the program experience by the intern, mentor, and sponsoring Center, Institute, or Office (CIO) of CDC. The intern will be released from all job duties during the time of participation in the program.

The QMEP is open to health and mathematical statisticians and to other scientists who have a strong career interest in statistical and epidemiologic analytic methods. Applicants must be permanent employees of CDC with a minimum of two years service in the agency, and must have secured approval from supervisors to participate in the program. Applicants should be at the GS-11/12/13 (or CO-04/05 level for Commissioned Corps employees), and have received a rating of "Excellent" (or "D" for Commission Corps employees) or higher on their most recent end-of-year personnel evaluation.

Each applicant must submit to the human resources organization a current position description, including job series and grade, CIO, and location; curriculum vitae; name, address, and phone number of immediate supervisor; a one-page memorandum that addresses the following topics:

- N Reason for applying to the program
- N Specific methods area(s) in which new skills or knowledge are sought
- N Primary learning objective(s)
- N Description of how assignment will benefit career goals
- N Description of how new or enhanced skills will benefit the sponsoring CIO.

After a SAG subcommittee screens applicants, prospective applicants will receive a listing of available projects/methods areas and associated mentors for the program. Mentors will be located throughout CDC, including locations other than Atlanta (CDC's headquarters). Subsequently, mentors and applicants will interview each other and rank their choices. A matching process will be used to team selected program participants with mentors. CDC plans to select a maximum of three applicants will be selected for the initial year of the program, depending on qualifications and availability of interns and mentors.

The duration of this training is variable, depending on the length of projects. Generally, intern assignments will be four months to one year. The QMEP, modeled after CDC's long-term training program, calls for the applicant's sponsoring office to provide the FTE and salary support throughout the training period, but there is flexibility in this arrangement and exceptions to this model should be mutually agreed upon by the sponsoring and receiving offices. The intern will return to their own office upon completion of training.

**Impact of the QMEP.** The QMEP was first introduced for FY 97; one can not yet evaluate results. It goes without saying that, whenever a new program is established, there are issues to be discussed and difficulties to be overcome before the program can be effective and successful. To ensure the success of the QMEP, these are a few of the concerns that CDC must address:

- N Foster “buy in” by management to support a career development program in which a sponsoring group will lose the use of the intern and the intern’s staff position for the duration of the internship,
- N Accrue a number of scientifically diverse and statistically valid projects and mentors for the interns,
- N Evaluate usefulness of limited eligibility (QMEP is available to GS-11/12/13 civil service and CO-04/05 Commissioned Corps staff who have been employed for at least two years with CDC),
- N Ensure widespread announcement and afford opportunities to ask questions about the QMEP,
- N Implement the program in different CDC cities and across CDC agencies.

All these difficulties can be overcome with carefully prepared messages to employees regarding the usefulness of training programs. Support for the program acknowledges that:

- N supervisors and agencies have a major responsibility for the career growth of employees,
- N career enhancement programs such as the QMEP benefit the organization in technical expertise and overall work environment,
- N employees not supported in their professional development will either be unhappy (and not maximally effective in their jobs) or will seek other opportunities offering career support.

It is arguably more cost effective to support career training opportunities, gaining employees with increased skills and better working attitudes, rather than lose them. In the latter case, vacancies arise — requiring long recruitment times to fill — and, worse, a negative working environment is created — which impedes recruitment efforts and inevitably proves detrimental to those employees who remain with the organization. In addition, the QMEP is a highly competitive program which can be used as a reward for deserving individuals (both interns and mentors) in times of downsizing at a time when cash and other awards may be difficult to justify or facilitate.

The QMEP is a new career enhancement program that presents a model that might have application at other federal statistical agencies. Although there are drawbacks to the program from a resource standpoint, the potential gain is great in development of individual capabilities and agency capacity building in statistical and other analytic methods for application to important public health problems. The program provides flexibility to meet the career growth needs of those who wish to remain in disciplines of quantitative analysis, as well as those who wish to expand their skills into areas of quantitative methods and possibly switch career paths.

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