

Upward Trend Continues with Largest Gain in U.S. Average Salary since 2005

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A record number of NACE International members participated in the 12th annual corrosion career survey—2,186 from the United States and 314 from Canada—almost double the number of U.S. responses from last year, and ~77% more Canadian responses than in 2009. In the U.S., 21% of those contacted submitted a completed survey, and 16% of everyone contacted in Canada took part. The staff of MP extends our thanks to everyone who contributed to the survey and shared information that helped create this report for NACE members and others who work in corrosion control. Next year's survey will be e-mailed sometime during April 2011.

Average annual salaries in the corrosion industry continue to climb upward in 2010, reaching a new high in both the United States and Canada and continuing an upward trend experienced in both countries since 2005. Including salary and bonuses, the average annual U.S. compensation is \$95,036, up 4.5% from \$90,902 reported last year and a 7.6% increase above the average salary calculated in 2008. The average annual Canadian taxable income is CAN\$103,317, a 6.8% increase over the 2009 average salary of \$96,757 and a 9.5% increase from two years ago. For the first time since MP has conducted the corrosion career survey, the average annual salary for corrosion professionals in Canada reached six figures. See Table 1 for a listing of average corrosion salaries for the past 12 years. At press time (May 26, 2010), the currency exchange rate was U.S. \$1 to CAN\$1.07.

TABLE 1

History of Average Annual Corrosion Salaries

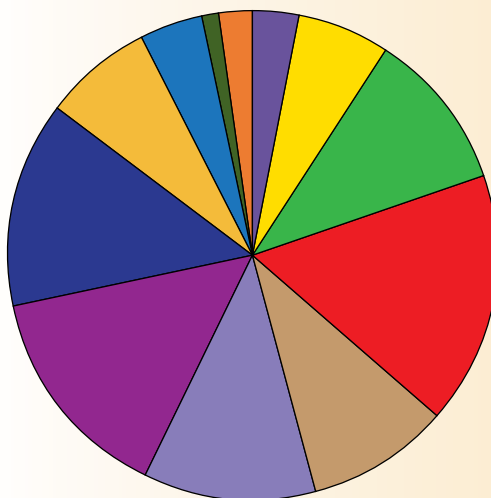
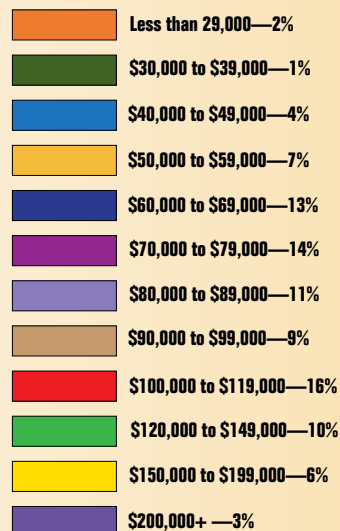
Year	United States ^(A) (U.S.\$)	Canada ^(B) (CAN\$)
2010	\$95,036	\$103,317
2009	\$90,902	\$96,757
2008	\$88,354	\$94,357
2007	\$87,792	\$92,594
2005	\$84,421	\$76,580
2004	\$73,181	\$77,773
2003	\$74,696	\$76,245
2002	\$74,440	\$76,330
2001	\$72,305	N/A
2000	\$73,776	N/A
1999	\$69,240	N/A
1998	\$66,420	N/A

Source: NACE International Annual Corrosion Career Survey

^(A)Salary plus bonus.

^(B)Taxable income in Canadian dollars.

N/A: Information not available. Canadian salaries were added to the survey in 2002.

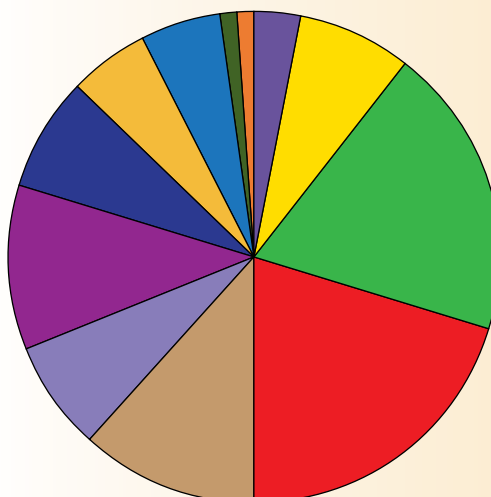
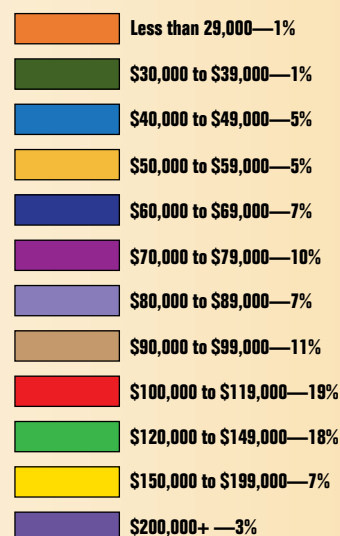
FIGURE 1**Average Annual Compensation for U.S. Corrosion Professionals^(A)****Salary Range—% of Respondents**^(A)Salary plus bonus.

This is the 12th survey conducted since the first career questionnaire was sent out to NACE International members in 1998 to compile information on their annual compensation, job duties, work experience, education level, company size, and number of years in the profession. Results for 2010 indicate that corrosion professionals are continuing to earn good incomes despite the economic downturn that has gripped the world for the past two years. More than half of U.S. respondents (55%) and 65% of Canadian respondents earn \$80,000 or more annually, an increase over last year's survey percentages, with those earning an annual salary of \$90,000 or more totaling 44% in the United States (same as 2009) and 58% in Canada (a 6% increase over last year). Those earning \$100,000 or more in 2010 comprised 35% of respondents in the United States (no change from the 2009 survey results) and 47% in Canada (an increase from 43% reported last year). Average annual compensation by salary range for both the United States and Canada are shown in Figures 1 and 2.

In the United States, higher average annual salaries correspond with years of corrosion experience and education levels, with salaries steadily rising in conjunction with more years of corrosion service and more advanced degrees. Higher average annual salaries in Canada also correlate with more of years of corrosion experience, and more hours worked per week.

Corrosion Professionals Are Experienced, Educated, and Stable

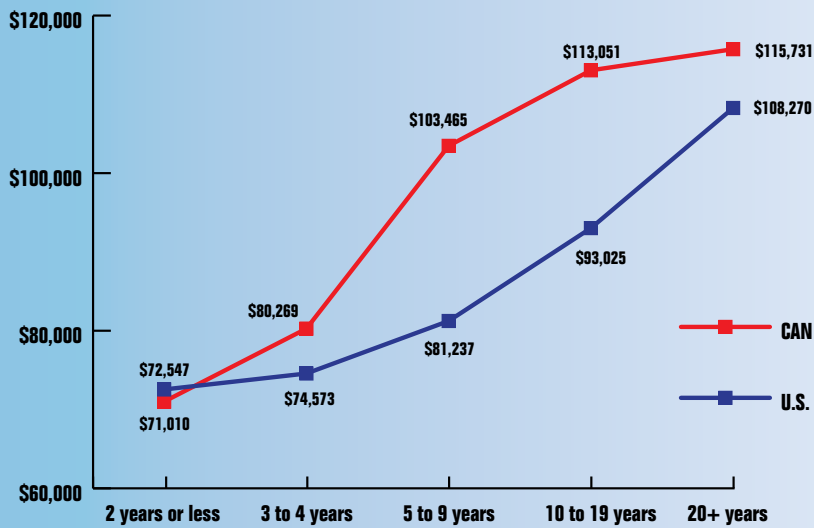
Today's corrosion control work force is comprised of many experienced and knowledgeable individuals. NACE members in the industry for a significant amount of time greatly outnumber those with less corrosion experience. In the United States, 68% of NACE members have been professionally involved in cor-

FIGURE 2**Average Annual Compensation for Canadian Corrosion Professionals^(A)****Salary Range—% of Respondents**^(A)Taxable income in Canadian dollars.

rosion prevention and mitigation for at least 10 years, while 43% have worked in the industry for 20 years or more. Canadian members who have worked in the corrosion field for 10 years or more include 62% of the work force, with 34% possessing a minimum of 20 years of corrosion experience. These figures mirror last year's results. The percentage of U.S. members with four or less years of corrosion experience remains the same as last year at 16% of the work force. However, members joining the corrosion profes-

sion in Canada within the last four years comprise 23% of that nation's corrosion work force, up from 21% in 2009. Figure 3 illustrates average salary by years of corrosion experience for both U.S. and Canadian respondents.

Close to half of the U.S. survey participants (46%) have been NACE members for 10 years or more, with 22% maintaining their NACE membership for 20 years or more. For U.S. respondents, average annual salaries steadily increase as the number of years of NACE mem-

FIGURE 3**Average Salary by Years of Corrosion Experience**

number (80% in the United States and 86% in Canada) have attended educational, course-based training in the past 10 years, with 74% (United States) and 69% (Canada) holding at least one NACE certification and 17% (United States) and 26% (Canada) acquiring a professional certification issued by another recognized authority. Average salaries by highest education level are shown in Figure 5.

This year, respondents were asked to provide more information about their NACE certifications. The three certifications held by the highest percentage of respondents in the United States include Coating Inspector Program (CIP) Level 1 (17%), followed by Cathodic Protection (CP) Tester (11%) and Corrosion Technician (10%). In Canada, the most-held certifications are CIP Level 1 (23%) and Corrosion Technologist (10%), followed by CP Tester (9%) and CIP Level 2 (9%). Table 2 lists average salaries by NACE certification.

In addition to continuing in the corrosion vocation for many years, a number of corrosion professionals also tend to stay with their companies on a long-term basis. In the United States, 49% of respondents report working for the same employer for the past 10 years, with 25% of respondents changing employers once, 10% changing twice, 8% making three changes, and 3% changing companies four times during the 10-year time frame. Similarly, 40% of Canadian recipients have remained with the same company for 10 years while 24% have changed employers once, 17% have changed companies twice, 9% have changed three times, and 3% have made four changes. Although 20% of U.S. and 17% of Canadian survey participants report they have worked for their current employer for 20 years or more, these percentages are lower than last year's statistics, which were 28% for U.S. and 21% for Canadian respondents.

FIGURE 4**Average Salary by Years in NACE International**

bership increases. In Canada, 39% of respondents have been NACE members for 10 or more years, with 17% continuing their membership for more than 20 years. In both countries, the percentage of newer members (two years or less) remains strong, with 20% in the United States and 27% in Canada. As of May 24, 2010, total NACE membership was 23,061. In Figure 4, average salaries are listed according to the number of years of NACE membership.

Education and training continues to

drive the corrosion work force in North America. About 64% of NACE members in the United States and 59% in Canada possess an associate's degree or higher, with 31% of U.S. and 26% of Canadian survey participants holding a bachelor's degree, 11% (United States) and 8% (Canada) earning a master's degree, and 5% (United States) and 2% (Canada) achieving a doctorate degree or higher. Those with a Professional Engineer (P.E.) license comprise 11% of U.S. and 16% of Canadian respondents. A significant

The number of hours spent on the job is steady as well, as indicated by the survey responses. Corrosion professionals in the United States typically work between 40 to 49 hours per week (64% of respondents) although some professionals put in up to 59 hours a week (20%) and a few work 60 hours or more (8%). Only 5% work less than 40 hours a week. Most Canadian professionals also report working between 40 to 49 hours per week (60% of respondents), with 16% working up to 59 hours per week and 5% spending 60 hours or more per week at their job. Unlike U.S. results, 14% of survey participants in Canada report working 30 to 39 hours a week, with 3% putting in less than 30 hours. Figure 6 provides a look at average salaries based on hours worked per week.

Those respondents who work for companies with 500 or more employees are in the majority—57% for U.S. members and 51% for Canadian members—with 16% (United States) and 17% (Canada) working for companies with 100 to 499 employees, and 23% (United States) and 29% (Canada) working for companies with less than 100 employees. Those who are self employed include 10% of U.S. respondents and 12% of Canadian respondents. Average salaries by company size are listed in Table 3.

A Variety of Corrosion Jobs Across Many Industries

Survey participants were also asked to select a description of their job as well as choose the classification that best depicts their company's function. A variety of jobs were reported and many industries were represented. Technician or technologist was the job type selected by the largest percentage of U.S. respondents (20%), followed by engineer (18%), and quality assurance/quality control (QA/QC) inspector (15%), with the highest average annual salaries reported being

FIGURE 5

Average Salary by Highest Education Level

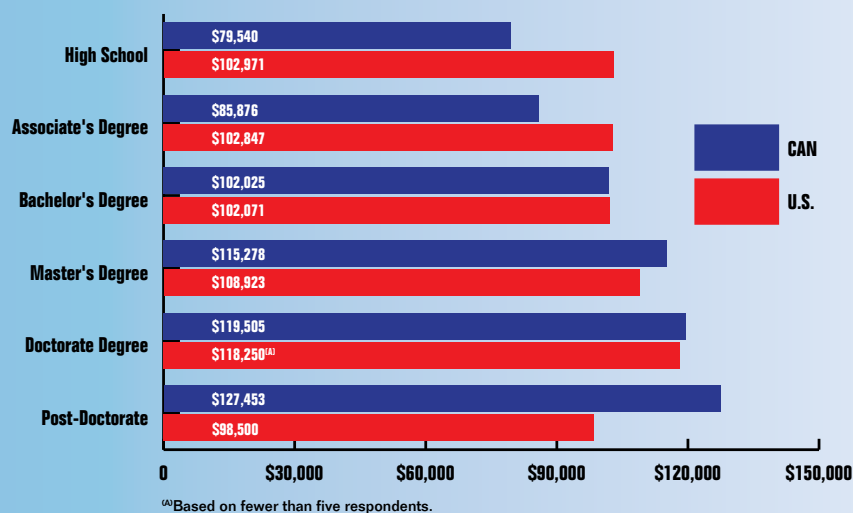


FIGURE 6

Average Salary by Hours Worked Per Week



\$121,029 for professors/teachers (<1% of respondents), \$114,077 for engineers, and \$111,406 for management (12% of respondents).

The highest percentage of Canadian professionals also classified their job function as technician or technologist (23% of respondents), with 20% selecting QA/QC inspector, 11% choosing management, and 11% specifying engineer. The highest average annual salaries reported for Canada were \$132,243 earned by management, \$128,841 for consultants

(7% of participants), and \$108,095 earned by engineers. Table 4 lists principal job types and corresponding average salaries for corrosion professionals in the United States and Canada.

Similar to the results from surveys conducted in 2008 and 2009, the largest percentage of U.S. respondents work with oil and gas pipelines/storage tanks (29%), followed by coatings and linings (12%). Oil and gas extraction comprised 6% of participants. In Canada, results were comparable to previous years' surveys

TABLE 2**Average Salary by NACE Certification**

NACE Certification	United States (U.S.\$)	Canada (CAN\$)
Coating Inspector Program (CIP) Level 1	\$86,057	\$96,160
CIP Level 1 Nuclear	\$123,875	\$54,500 ^(A)
CIP Level 1 with Bridge Specialty	\$98,250	\$109,500 ^(A)
CIP Level 1 with Marine and Bridge Specialties	\$147,833 ^(A)	N/A
CIP Level 1 with Marine Specialty	\$107,000 ^(A)	\$109,500 ^(A)
CIP Level 2	\$93,950	\$100,865
CIP Level 2 Marine	\$100,864	N/A
CIP Level 2 Nuclear	\$119,500	\$54,500 ^(A)
CIP Level 2 with Bridge Specialty	\$89,206	\$109,500 ^(A)
CIP Level 2 with Marine and Bridge Specialties	\$141,167 ^(A)	N/A
CIP Level 2 with Marine Specialty	\$119,500 ^(A)	\$109,500 ^(A)
CIP Level 3—Peer Review	\$97,103	\$108,548
CIP Level 3—Peer Review with Bridge	\$88,300	\$98,944
CIP Level 3—Peer Review with Marine	\$114,955	\$90,750 ^(A)
CIP Level 3—Peer Review with Marine and Bridge	\$107,083	\$111,167 ^(A)
CIP Level 3 Nuclear	\$130,286	N/A
Chemical Treatment Specialist	\$97,778	\$139,500 ^(A)
Corrosion Specialist	\$120,865	\$122,833
Corrosion Technician	\$79,745	\$97,648
Corrosion Technologist	\$90,297	\$113,716
Cathodic Protection (CP) Specialist	\$116,261	\$129,500
CP Technician	\$81,563	\$86,275
CP Technologist	\$90,824	\$111,265
CP Tester	\$77,565	\$94,756
Internal Corrosion Technologist	\$91,714	\$119,333
Material Selection/Design Specialist	\$119,167	\$150,875 ^(A)
O-CAT Technician	\$135,600	N/A
PCIM Level 1	\$119,500 ^(A)	\$94,500 ^(A)
Protective Coating Specialist	\$122,844	\$94,500
SCAT Technician	\$77,833	\$92,000 ^(A)
Senior Corrosion Technologist	\$99,043	\$124,893
Senior Internal Corrosion Technologist	\$131,000	\$174,500 ^(A)

N/A: No respondents selected this category.
^(A)Based on fewer than five responses.

TABLE 3**Average Salary by Company Size**

(Number of Employees)	United States (U.S.\$)	Canada (CAN\$)
1-5	\$99,152	\$103,049
6-19	\$93,160	\$102,000
20-49	\$84,298	\$85,750
50-99	\$86,077	\$79,211
100-499	\$88,626	\$103,791
500+	\$97,671	\$107,686

“Convincing upper management to expend monies to prevent issues that will arise in 20 years is as difficult as doctors convincing teenagers to change their lifestyle so they will still have their health at 50.”

as well, with 27% selecting oil and gas pipelines/storage tanks, 15% choosing oil and gas extraction, and 14% selecting coatings and linings. Reported average annual salaries in the United States were highest for instrumentation (\$133,600 with <1% of responses), while the highest average salaries in Canada were found in refining (\$129,536 with 4% of respondents). See Table 5 for average annual salaries by company function.

Comparing Corrosion Jobs in the States and Provinces

Responses came in from all 50 U.S. states and nine Canadian provinces (no territories), although some had so few replies that the average salaries reported may not be typical. Tables 6 and 7 depict average salaries by state and province, respectively. As in 2009, most respondents in the United States are located in Texas (23%), Louisiana (6%), California (5%), and Pennsylvania (4%). Similarly, Canadian results mirror last year’s survey as well, with the highest number of participants in Alberta (56%), Ontario (14%), and British Columbia (10%).

Survey results indicate Alaska has the highest average annual salary in the United States, followed by New Hampshire; California; Washington, DC; and Texas. New Hampshire and DC had fewer than five respondents. Provinces with the highest average annual salaries are Manitoba (less than five respondents), Alberta, Newfoundland and Labrador, and Saskatchewan.

Challenges Facing the Corrosion Professional

When asked to select which single aspect of the job they would most like to change, 24% of U.S. participants and 25% of Canadian respondents chose “a larger budget for corrosion control,” followed by “more advancement opportunities” (22% in the United States and 20% in Canada). Figures 7 and 8 show survey results for career priorities of U.S. and Canadian participants.

Many survey participants in the United States and Canada expressed a desire for a reduced work load or additional, qualified manpower to help decrease workplace overload and free up time to effectively focus on the corrosion tasks at hand. One member wanted “time to breathe—we are too busy!” Another member comments, “In years past, corrosion experts developed the science and technology in real plant or pipeline operational situations. In today’s competitive world, you have to get an immediate job done and move on to the next. There is no time or money to work out problems or develop technologies properly anymore.” Other respondents referred to the need for more educational opportunities, and would like to see budget increases to accommodate additional corrosion training, as well as structured mentoring or apprenticeship programs for people entering the industry.

Working in the corrosion industry has its challenges and survey participants noted several difficulties, including working with insufficient budgets; finding experienced personnel; staying current on new materials, equipment technology, and technical information; and trying to educate coworkers, clients, management, and the general public about the importance of corrosion control. One obstacle mentioned by many is educating management on the importance of investing funds to prevent and mitigate corrosion, and that an up-front investment will save money in the long run. Several remarked that many decisions are reactive rather than proactive. “Every time there is a budget crunch, the chemical budget gets cut. Management doesn’t recognize the detrimental long-term effects of a short-term fix on the budget,” says one respondent. Another notes, “People don’t understand that just because we haven’t had any leaks doesn’t mean that we won’t have any leaks, unless we work to measure and prevent the damage.”

Along with the hurdle of getting funding for corrosion prevention and mitigation,

TABLE 4

Average Salary by Job Type		
Job Function	United States (U.S.\$)	Canada (CAN\$)
Chemist	\$95,581	\$106,500
Consultant	\$110,362	\$128,841
Contractor	\$94,830	\$97,765
Designer/Architect	\$79,500 ^(A)	\$94,500 ^(A)
Engineer	\$114,077	\$108,095
Inspector/QA/QC	\$84,153	\$100,586
Maintenance	\$77,328	\$102,500
Management	\$111,406	\$132,243
Professor/Teacher	\$121,029	\$67,833 ^(A)
Retired	\$70,938	\$54,500 ^(A)
Sales/Marketing	\$95,011	\$107,500
Student	\$32,100	\$31,750 ^(A)
Technician/Technologist	\$71,867	\$90,433
Other	\$95,110	\$89,444

^(A)Based on fewer than five responses.

TABLE 5

Average Salary by Company Function		
Company Function	United States (U.S.\$)	Canada (CAN\$)
Aerospace	\$86,022	N/A
Anodic/Cathodic Protection	\$83,021	\$77,594
Chemical Processing	\$104,051	\$107,000
Coatings & Linings	\$90,716	\$88,042
Construction	\$89,866	\$90,333
Education/Academic	\$115,813	N/A
Engineering/Architecture Consulting Firm	\$107,972	\$108,867
Government	\$91,100	N/A
Inspection	\$99,500	N/A
Instrumentation	\$133,600	\$112,000 ^(A)
Metals & Mining	\$101,914	\$102,000 ^(A)
Natural Gas	\$74,727	\$74,500 ^(A)
Oil & Gas Extraction	\$126,491	\$124,058
Oil & Gas Pipeline/Storage Tanks	\$86,300	\$103,383
Original Equipment Manufacturer	\$98,849	\$113,750
Plastics/Nonmetals	\$122,000 ^(A)	\$64,500 ^(A)
Power Plant/Electric Utility	\$95,218	\$117,500
Pulp & Paper	\$81,500	N/A
Refining	\$125,750	\$129,536
Research & Development	\$103,000	\$84,500 ^(A)
Ships/Marine/Offshore Platforms	\$86,773	\$80,333
Testing Services	\$79,605	\$88,875
Transportation	\$92,378	\$72,000 ^(A)
Water Distribution/Treatment	\$84,955	\$138,250 ^(A)

N/A: No respondents selected this category.
^(A)Based on fewer than five responses.

respondents pointed out the problem of demonstrating the value of corrosion control, proving that corrosion mitigation techniques are working, and getting management to buy into them. One survey participant observes that there are no failures when corrosion mitigation programs work, so everyone assumes the programs

can be optimized and cut. Another says that it can be challenging to justify the dollars and effort expended because there is a lag between process changes and the manifestation of corrosion problems. “If everything is going well, then nothing happens (no corrosion incidents). So it sometimes happens that budgets get cut,

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FIGURE 7

Career Priorities (United States)

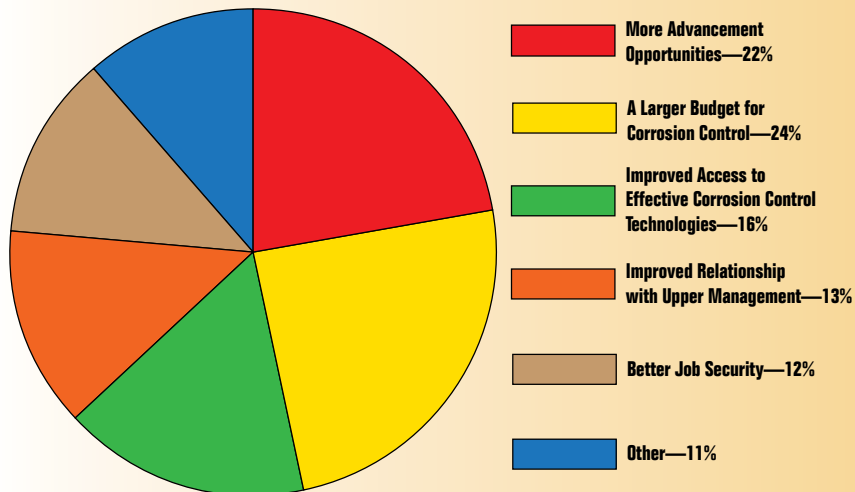
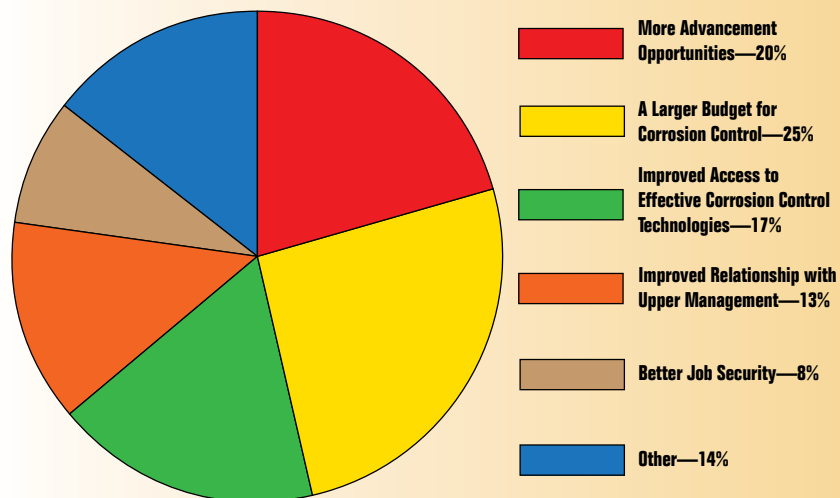


FIGURE 8

Career Priorities (Canada)



effective mitigation measures are reduced in scope . . . and five years later you end up with integrity issues and are accused of not having done your job.”

As one member sums it up, “Corrosion is a silent killer, just like high blood pressure. With limited budgets, most companies are fixed on the obvious issues, leaving corrosion alone until the heart attack. Convincing upper management to expend monies to prevent issues that will arise in 20 years is as difficult as doctors convincing teenagers to change their lifestyle so they will still have their health at 50.”

Survey Methodology

The 2010 Corrosion Career Survey was

again conducted in North America using online survey software. In April 2010, approximately 10,000 members in the United States and 2,000 members in Canada received an e-mail with an invitation to participate and a link to their respective survey. At the close of the survey, 2,186 U.S. surveys were submitted, representing a 95% confidence level in the survey results, plus or minus 1.8% for error; and 314 Canadian surveys were returned, resulting in a 95% confidence level with a margin of error of plus or minus 5%.¹

Reference

- 1 The Survey System, <http://www.surveysystem.com/sscalc.htm>. **MP**

TABLE 6**Average Salary by U.S. State (U.S.\$)**

State	Average Salary	State	Average Salary
Alabama	\$89,500	Montana	\$75,500
Alaska	\$129,547	Nebraska	\$75,409
Arizona	\$80,986	Nevada	\$98,250
Arkansas	\$84,222	New Hampshire	\$127,833 ^(A)
California	\$112,382	New Jersey	\$99,744
Colorado	\$92,926	New Mexico	\$76,597
Connecticut	\$98,891	New York	\$94,661
Delaware	\$89,042	North Carolina	\$79,600
District of Columbia	\$109,500 ^(A)	North Dakota	\$73,071
Florida	\$84,029	Ohio	\$87,012
Georgia	\$97,520	Oklahoma	\$96,135
Hawaii	\$78,667	Oregon	\$84,955
Idaho	\$78,333	Pennsylvania	\$90,434
Illinois	\$100,500	Rhode Island	\$89,500
Indiana	\$88,786	South Carolina	\$89,885
Iowa	\$88,059	South Dakota	\$62,500
Kansas	\$75,081	Tennessee	\$90,964
Kentucky	\$85,232	Texas	\$107,997
Louisiana	\$91,354	Utah	\$69,423
Maine	\$94,115	Vermont	\$80,333
Maryland	\$100,571	Virginia	\$80,380
Massachusetts	\$102,875	Washington	\$89,500
Michigan	\$86,783	West Virginia	\$72,839
Minnesota	\$75,889	Wisconsin	\$84,500
Mississippi	\$77,595	Wyoming	\$88,854
Missouri	\$75,422	U.S. Average	\$95,036

^(A)Based on fewer than five responses.

TABLE 7**Average Salary by Canadian Province and Territory (CAN\$)**

Province/Territory	Average Salary
Alberta	\$114,070
British Columbia	\$95,971
Manitoba	\$200,000 ^(A)
New Brunswick	\$64,500
Newfoundland and Labrador	\$99,500
Northwest Territories	N/A
Nova Scotia	\$77,000
Nanuvut	N/A
Ontario	\$87,313
Prince Edward Island	N/A
Quebec	\$80,861
Saskatchewan	\$97,563
Yukon	N/A
Canadian Average	\$103,317

N/A: No respondents selected this category.

^(A)Based on fewer than five responses.

Past NACE Corrosion Career Surveys

The most recent corrosion career surveys can be found on the NACE International Web site: www.nace.org. NACE members can access surveys back to 2005 through previous online issues of *MP*, available through the NACE Web site. For information on NACE membership, see the Web site or contact the *FirstService* Department at phone: +1 281-228-6223 or e-mail: firstservice@nace.org.