

# Annotated Bibliography for Medical Technologists Longitudinal Study

Harmening, DM; Castleberry, BM; Lunz, ME (1994). **Technologists Report Overall Job Satisfaction, 10- Year Retrospective Study Examines Career Patterns.** Laboratory Medicine, December 1994, Volume 25, Number 12, 773-775.

The purpose of this study was to examine career choices made by medical technologists and to utilize the information to help predict future medical technologist career patterns. In 1993, the Research and Development Committee of the American Society of Clinical Pathologists Board of Registry conducted a 10-year retrospective study of medical technologists to determine career progression after certification. Approximately 1,000 surveys were mailed to medical technologists who were certified by the Board of Registry in 1983. The committee assessed 417 usable surveys, representing a 42% return, regarding the sample's professional activities from 1983 to 1992. The committee evaluated a variety of activities with emphasis on patterns in salary levels; specialization; acquisition of additional certification, degrees, or both; promotion; and career changes. Overall, a positive portrait of the career patterns of medical technologists emerges with 75% of respondents remaining in the laboratory work force at the end of the 10-year period and more than 75% reporting their job satisfaction as moderate or high.

Guiles, H.J. & Lunz, M.E.. (1995). **A Comparison of Medical Technologist Salaries With Other Job Categories and Professions.** Laboratory Medicine, Vol. 26, No. 1, January 1995, 20-22.

The ASCP-BOR Research and Development Committee completed a 10-year retrospective study of the career patterns of medical technologists. The question arose as to how salaries compared with those from other job categories, other allied health professionals, and other groups that require the baccalaureate degree for job entry. The data indicate a steady rise in the average income of medical technologists during the last 10 years and this rise has stayed ahead of inflation. Medical technologists appear to be making a decent living but salary growth is not as fast as that for nurses, physical therapists, or physician assistants. The majority of medical technologists, however, were satisfied with their jobs. Overall, medical technologists appear to be doing better financially than the majority of the American workforce but worse than some other allied health professionals who provide primary care.

Rudmann, S.V., Lunz, M.E., Summers, S.H. (1995). **Entry-Level Technologists Report Job Preparedness.** Laboratory Medicine. Vol. 26. No. 11, November 1995, 717-719.

In 1993, the ASCP-BOR began a 10-year prospective, longitudinal study of the career patterns of medical technologists. Clinical Laboratory educators require continual updates on the reality of professional practice in order to provide curricula that match demands in practice settings. This article addresses respondent's perceptions of their preparedness for entry-level job tasks. Overall, the data show a strong positive correlation between frequency of task performance and quality of educational preparation ( $r=.97$ ). In general, respondents perceived their educational preparation as good to excellent for tasks performed frequently at the entry level. Results indicate that CAHEA/NAACLS programs are preparing students for tasks they perform on entry into the profession. The data further validate the ASCP scope-of-practice document; tasks delineated in this document are consistent with those performed at entry level.

Harmening, D.M., Lunz, M.E. (1996). **Increasing Diversity in the Workplace.** Laboratory Medicine. Vol. 27. No. 1, January 1996, 25-27.

In 1993 the Research and Development committee of the ASCP-BOR launched a 10-year prospective, longitudinal study of medical technologists to determine career patterns after certification. The committee mailed 2,002 surveys to those who qualified for ASCP certification in 1993. The committee received 1,156 usable surveys (a 58% response rate). This report highlights the demographic, responsibilities, and job satisfaction results from the first year of the study and comparisons are made between this group and a 1993 10-year retrospective study of the career progression of medical technologists. The results reveal that the medical technology workforce reflects diversity in terms of gender and ethnic background. These results parallel the national trend toward multiculturalism in the workplace. In addition, the first year responsibilities for those who qualified for certification in 1993 represented a range of responsibilities that varied with location and type of facility where respondents were employed. Job satisfaction reported by respondents in 1993 prospective survey closely parallels the level reported by respondents in the retrospective study. On average, more than 75% of respondents in both groups were satisfied with their careers. Generally, entry-level medical technologists devote most of their time to technical skills and are satisfied with the environment they work.

Lunz, ME; Sharp, S; Castleberry, BM (1996). **Career Commitment, Nature, Nurture, or Both?** Laboratory Medicine, November 1996, Volume 27, Number 11, 736-740.

The purpose of this study was to identify factors that may impact career commitment. The sample used was 864 individuals from a prospective longitudinal study of medical technologist career patterns begun in 1993 by the Research and Development Committee of the ASCP-BOR. Career commitment was assessed using a seven item four point scale developed by Blau. The study found no significant relationship between career commitment and wages, performance on certification examination, or most other demographics. The only demographic variables that had significant differences were laboratory area and route of certification examination eligibility. Technologists working in the blood bank area and those who attended accredited MT schools had higher commitment scores than the other groups. The average career commitment score for all demographic groups was in the moderate range. The study concluded that laboratories should continue to utilize nature in hiring practices (selection of individuals who demonstrate characteristics of high career commitment) while at the same time encouraging nurture by improving the laboratory work environment variables.

Lunz, ME; Morris, MW; Castleberry, BM (1996). **Medical Technologist Career Commitment and Satisfaction with Job Benefits.** Clinical Laboratory Management Review, The Journal of the Clinical Laboratory Management Association, Volume 10, Number 6, November/December 1996, 613-618.

The purpose of this study was to determine the impact of career commitment on satisfaction with job-related benefits. A validated seven-point career commitment scale was used to measure career commitment. A 31-item benefits survey was used to collect data on satisfaction. In addition, salary information was collected. An analysis of variance was used to analyze the data. The high career commitment group was significantly more satisfied with 29 of the 31 benefits. There was no significant difference in salary among high, medium, and low career commitment groups. Low commitment individuals comprised only 11.5% of the respondents. The positive attitudes of the majority of medical technologists are a useful asset to the laboratory during this time of change in the practice of laboratory medicine.

Summers, SH; Harmening, DM; Lunz, ME (1998). **Who Performs Point-of-Care Testing?** Laboratory Medicine, February 1998, Volume 29, Number 2, 85-88.

The purpose of this study was to determine which health care personnel perform point-of-care testing (POCT), what tests are most frequently performed, and what the role of the clinical laboratory is in POCT. In 1993, the Research and Development Committee of the ASCP - BOR began a longitudinal study of medical technologists to determine career patterns. Subjects of the POCT study were 342 (approximately 30% of the total) participants of the longitudinal study who indicated that their institution performed POCT. The data reflects that the nursing department most frequently performs POCT and supervises personnel who perform POCT in hospitals. POCT tests most frequently performed include urine dipstick and blood glucose tests (each with 34% of the total tests). The laboratory's primary roles are developing procedures

Blau, G; Lunz, ME (1998). **Testing the Incremental Effect of Professional Commitment on Intent to Leave One's Profession Beyond the Effects of External, Personal and Work Related Variables.** Journal of Vocational Behavior, Volume 52, 260-269.

This study utilized a framework of external, work-related, and personal variables to study the effect of professional commitment on the intent to leave the profession of medical technology. A sample of 457 medical technologists involved in the ASCP-BOR Research and Development Committee's ten year longitudinal study (which began in 1993) was used. The study found that younger and less satisfied individuals had a higher intent to leave medical technology. In addition, men showed more intent to leave the profession. The study found that after controlling for the other variables, professional commitment accounted for 11.6% of the variance for intent to leave the profession of medical technology.

Lunz, M; Harmening, D; Castleberry, B (1998). **Effects of Reducing Staff in the Laboratory on Task Responsibilities, Job Satisfaction, and Wages.** Laboratory Medicine, Volume 29, Number 6, 341-345.

The purpose of this study was to determine the effect of staff reductions on job satisfaction, responsibilities, and wages. The sample was a randomly selected stratified sample of approximately 600 medical technologists from the third year of a 10 year longitudinal study begun in 1993 by the ASCP-BOR. The data revealed an increase in wages for all job titles in laboratories that reduced staff. Overall, job satisfaction was in the moderate range for all categories. However, job satisfaction was lower for those who worked in laboratories that reduced staff except for supervisors and managers whose satisfaction was higher in those that had staff reduction. Supervisors and managers also gained job responsibilities in labs that reduced staff.

Guiles, JH; Imo, P; Davli, A; Rahaman, F; Bergstrom, B (1999). **Work and Lifestyle Variables Affect Medical Technologist Earnings.** Laboratory Medicine, Volume 30, Number 7, 478-482.

This study is a descriptive analysis of data collected by the ASCP-BOR Research and Development Committee from the fourth year of a longitudinal study of career patterns of medical technologists. Analysis of variance of work and lifestyle variables was performed to determine which variables had a statistically significant effect on the earnings of medical technologists. Those found to be significant were position title, birth year, sex, certification examination eligibility route, job location, institution type, job change, and the reason for and type of job change.

Ludlow, LH (1999). **The Structure of the Job Responsibilities Scale: A Multimethod Analysis,** Educational and Psychological Measurement. Volume 59, Number 6, 962-975

The purpose of the study was to investigate the psychometric characteristics of the Job Responsibilities Scale (JRS) that was developed for use in a longitudinal study of medical technologists career patterns conducted by the ASCP-BOR R&D Committee. The paper discusses four different statistical techniques used to investigate the psychometric structure of the JRS. Results show that the JRS measures a continuum of increasingly greater job responsibility tasks and support continued use of the JRS in the longitudinal study.

Blau, G; Lunz, M (1999). **Testing the Impact of Shift Schedules on Organizational Variables.** Journal of Organizational Behavior, 20:933-942.

Using a sample of 705 full-time medical technologists who worked distinct fixed day, evening, night or rotating shifts, this study found that day shift MTs had lower job content routinization (more task enrichment) than evening, night and rotating shift MTs. Contrary to previous research using other career fields, rotating shift MTs did not have lower work attitudes than fixed shift MTs. The sample MTs were participants in the 1993, 1994, and 1995 ASCP-BOR prospective study surveys who responded all three years.

Blau, G (1999). **Early Career Factors Influencing the Professional Commitment of Medical Technologists.** Academy of Management Journal, 42:687-695.

This study utilized information obtained from 484 employed medical technologists who responded to the ASCP-BOR prospective study surveys each of the four years from 1993 – 1996. It found that professional behaviors and task responsibilities influence the professional commitment of medical technologists in their early careers. After controlling for individual background factors, routine tasks and numbers of professional organization memberships had a positive effect, and advanced professional research activities had a negative effect on the careers of MTs in the first four years of their careers.

Guiles HJ, Imo P, Dawli A, Rahaman F, Bergstrom B. **Investigation of Gender Discrepancy in Earnings of Medical Technologists.** Laboratory Medicine, September 1999, 30(9):605-608.

This study examines the difference in wages by gender found in the ASCP-BOR longitudinal study of career patterns of medical technologists. The most important variables relating to higher wages were the combination of male gender, born prior to 1970, employment in suburban locations, and previous ASCP certification as an MLT. Other significant variables that interacted with gender resulting in earnings discrepancies included advanced degree, type of employer, job change, and reason for the job change.

Blau, G. **Testing the Longitudinal Impact of Work Variables and Performance Appraisal Satisfaction on Subsequent Overall Job Satisfaction.** Human Relations, 1999, 52:8, 1099 – 1113.

Using a longitudinal sample of medical technologists (MTs) this study found, after controlling for prior overall job satisfaction, individual difference, and organization-level variables, that task responsibilities and employee performance appraisal satisfaction significantly declined for repeat-respondents over the r-year period. Data also suggested that the impact of task responsibilities on overall job satisfaction can dissipate over time, and that the supervisor's role in affecting employee job satisfaction is important. Results and limitations are discussed.

Ward-Cook K, Tatum DS, Jones G. **Medical Technologist Core Job Tasks Still Reign.** Laboratory Medicine, July 2000, 375 – 379.

This study examines the changes in job task responsibilities of medical technologists during the first five years of the ASCP-BOR prospective study of MT career patterns begun in 1993. At entry-level, the medical technologists performed core tasks more frequently than either advanced technical or management tasks. Five years later the core task responsibility remained at a high level and advanced technical and management tasks had increased. The data also revealed that the entry-level task mix of medical technologists was the same regardless of gender, ethnicity, job title, facility location, or degree obtained.

Blau, G. **Job, Organizational, and Professional Antecedents as Predictors of Intent for Interrole Work Transitions.** Journal of Vocational Behavior, 2000, 56:330-345.

This study utilized data from a four-year period (1993-1996) of the ASCP-BOR's prospective study of medical technologist career patterns. The study showed that organizational context had a significant effect on later intent to leave the organization, professional context had a significant effect on later intent to leave the profession, and job context (satisfaction) had a significant effect on both intents. In addition, intent to leave one's organization, to leave the profession, and intended retirement age were distinguishable interrole work transitions.

Summers SH, Blau G, Ward-Cook K. **Professional Development Activities of Medical Technologists: Management Implications for Allied Health.** Journal of Allied Health, 29(4): 214-219, Winter 2000.

This study looks at two related yet distinct types of professional development of medical technologists in the first five years of the ASCP-BOR longitudinal study of career patterns. The two types of professional development are administrative (organizing or process base) and scholarly (knowledge or content base). By the fifth year the administrative professional development mean had significantly increased and was shown to be significantly related to complex tasks, work satisfaction, day shift employment, team participation, and organizational commitment. The scholarly professional development mean had a marginally significant increase and was related to gender (male) and continuing education in addition to the variables listed for administrative.

Blau G, Tatum D. **Correlates of Perceived Gender Discrimination For Female Versus Male Medical Technologists.** Sex Roles, 43(1/2): 105-118, 2000.

This study examined perceived gender discrimination of medical technologists who participated in the ASCP-BOR longitudinal study in the years 1994-1997. Contrary to what would be expected in a female-dominated profession, female MT's perceived higher gender discrimination than male MT's. In addition, significant differences were found in perceived antecedent-gender discrimination correlations. However, both males and females reported that gender discrimination in the workplace was low (5.6 and 6.0 respectively on a perceived gender discrimination scale range of 3 – 12 ).

Blau G, Sharp S. **Job-loss Insecurity Versus Job-feature Insecurity among Medical Technologists.** J. Allied Health, 2000, 29: 86 – 90.

This study performed a factor analysis of job-loss insecurity (fear of losing a job) and Job-feature insecurity (fear of losing certain aspects of a job) using a sample of 292 medical technologists from the ASCP BOR prospective study over a three-year period. The study found that the two types of loss were related but distinguishable constructs. Cross-training desire and organizational downsizing were positively related to job loss insecurity and job satisfaction was negatively related. Team participation and number of professional organization memberships were negatively related to job-feature insecurity while performing routine tasks was positively related.

Blau, G. **Testing the Discriminant Validity of Occupational Entrenchment.** Journal of Occupational and Organizational Psychology, 74: 85 – 93, 2001.

Using data from the ASCP-BOR longitudinal survey, this study suggests that occupational entrenchment may be represented as a two-dimensional construct rather than three-dimensional as previously suggested. The two dimensions suggested are accumulated costs and limited alternatives. Accumulated costs include investments such as time or money and emotional costs of switching occupations. Limited alternatives ref

Blau G, Merriman K, Surges Tatum D Rudmann S. (2001) **Antecedents and consequences of basic versus career enrichment benefit satisfaction.** Journal of Organizational Behavior, 2001, 22: 669 - 688.

Using 250 repeat respondents participating in the ASCP-BOR prospective study over a four year period, this study gives information in support of a new way to look at benefit satisfaction dividing it into two facets - basic benefit satisfaction (benefits relating to employee safety and security) and career enrichment benefit satisfaction (benefits relating to employee employability and skill development). The data presented suggests that basic benefit satisfaction may be a predictor of general benefit satisfaction, turnover behavior, and organizational withdrawal intent. Career enrichment satisfaction appears to be a better predictor of later affective organizational commitment.

Guiles, HJ, Surges Tatum D. (2002) **The Learning and Application of Generic Skills by CLSs/MTs Who Have 'Left The Field'**. Clinical Laboratory Science, Winter 2002, 15:1, 23-29.

The purpose of this study was to determine which (if any) generic skills learned as medical technologists were used regularly in the "left the field" (LTF) jobs. A survey was sent to 103 medical technologists who had taken the ASCP medical technologist certification exam in 1993 and who had self-reported in a longitudinal study that they had left the field. The results showed that the generic skills possessed by MT's were consistently being used in a wide variety of other jobs. In addition, the study concluded that the MT majors learned the skills as well as and possibly better than MT's who obtained baccalaureate degrees in other fields.

Blau G, Surges Tatum D. (2002) **Further Distinguishing Basic Versus Career Enrichment, Benefit Satisfaction**. Benefits Quarterly, Third Quarter 2002, 18:3, 27-34.

This study used 202 four-year repeat respondents from the 1997 through 2000 surveys of the ASCP-BOR prospective study. The results indicate support for the separation of employee benefits into two distinct categories - basic and career enrichment benefits. It also reports a decline in satisfaction with both types of benefits from 1997 to 2000. Different predictors of subsequent benefit satisfaction were also studied.

Blau, G; Surges Tatum, D; Ward-Cook, K. (2003) **Correlates of Professional Versus Organizational Withdrawal Cognitions**. Allied Health Journal of Vocational Behavior. 2003, 63: 72-85.

This study utilized 226 medical technologists over a five year period from the ASCP-BOR ten year prospective study which began in 1993. The study looked at professional withdrawal cognitions (PWC) versus organizational withdrawal cognitions (OWC). It found that attitudinal professional commitment had a stronger negative relationship to subsequent PWC than to OWC while gender discrimination and organizational support had stronger relationships to subsequent OWC than PWC.

Blau, G; Surges Tatum, D; Ward-Cook, K. (2003) **Correlates of Fundamental Skills Versus Complex Skills for Medical Technologists**. Allied Health Journal of Allied Health. 2003, 32: 3-9

This study examined 165 medical technologists over a four year period of the ASCP-BOR ten year prospective study which began in 1993. The study found different antecedents for fundamental versus complex skills. Prior professional commitment was related positively to fundamental skills while professional withdrawal intent was related negatively. Prior scholarly professional development and job involvement were related positively to skills while job insecurity was related negatively.