

# Factors That Impact Clinical Laboratory Scientists' Commitment to Their Work Organizations

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**OBJECTIVE:** To assess the predictive ability of various aspects of the work environment for organizational commitment.

**METHODS:** A questionnaire measuring three dimensions of organizational commitment along with five aspects of work environment and 10 demographic and work setting characteristics was sent to a national, convenience sample of clinical laboratory professionals.

**SETTING AND PARTICIPANTS:** All persons obtaining the CLS certification by NCA from January 1, 1997 to December 31, 2006. Only respondents who worked full-time in a clinical laboratory setting were included in the database.

**MAIN OUTCOME MEASURES:** Levels of affective, normative, and continuance organizational commitment, organizational support, role clarity, role conflict, transformational leadership behavior of supervisor, and organizational type, total years work experience in clinical laboratories, and educational level of respondents. Questionnaire items used either a 7-point or 5-point Likert response scale.

**RESULTS:** Based on multiple regression analysis for the 427 respondents, organizational support and transformational leadership behavior were found to be significant positive predictors of affective and normative organizational commitment. Work setting (non-hospital laboratory) and total years of work experience in clinical laboratories were found to be significant positive predictors of continuance organizational commitment. Overall the organizational commitment levels for all three dimensions were at the neutral rating or below in the slightly disagree range.

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**CONCLUSIONS:** The results indicate a less than optimal level of organizational commitment to employers, which were predominantly hospitals, by CLS practitioners. This may result in continuing retention problems for hospital laboratories. The results offer strategies for improving organizational commitment via the significant predictors.

**ABBREVIATIONS:** ASCP = American Society for Clinical Pathology; CLS= clinical laboratory scientist as certified by NCA; MT = medical technologist as certified by ASCP; NCA=National Credentialing Agency for Laboratory Personnel; RT(R) = registered radiologic technologist as certified by the American Registry of Radiologic Technologists.

**INDEX TERMS:** clinical laboratory workforce; employee retention; organizational commitment.

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A variety of factors influence an employee's relationship to work (and vice versa). Relevant issues include satisfaction, wages, and commitment to the work place. In the literature employees' commitment to the work place is referred to as *organizational commitment*. While clinical laboratory scientists, also called medical technologists, may have commitments to individuals both within and outside the work place, this study will focus on their commitment to the organization in which they work and examine factors possibly influencing this commitment.

## BACKGROUND

For this study workplace organizational commitment is defined using the Meyer and Allen conceptualization. They contend that common to the various definitions of organizational commitment is a psychological state which (a) characterizes the employee's relationship with the organization, and (b) has implications for the employee's decision to continue membership in the organization. Thus, regardless of the definition, "committed" employees are more likely to remain in their work organization.<sup>1</sup>

Meyer and Allen contend organizational commitment is a multidimensional construct consisting of three dimensions: affective commitment, continuance commitment, and normative commitment.<sup>1</sup> "Affective commitment refers to an employee's emotional attachment to and identification with the organization."<sup>1</sup> Individuals with high levels of affective commitment continue employment because they *want* to. "Continuance commitment refers to an awareness of the costs associated with leaving the organization."<sup>1</sup> Those with high levels of continuance commitment stay with the organization because they *need* to. "Normative commitment reflects a feeling of obligation to continue employment."<sup>1</sup> Those with high levels of normative commitment stay with an organization because they feel they *ought* to remain (i.e., employee loyalty). An individual may have similar or different levels of all three types of commitment as they are not mutually exclusive.<sup>1</sup> In some research using the Meyer and Allen model, continuance commitment is measured as two components: accumulated costs and limited alternatives. High levels of both of these dimensions are associated with the *need* to stay with a workplace organization.<sup>2</sup>

## REVIEW OF LITERATURE

There is a large body of research on organizational commitment, though there are numerous differences in both the way commitment has been conceptualized and defined<sup>3</sup> and the patterns of the relationships.<sup>4,5</sup> Additionally, the context

of work and the culture of various professions may have different impacts on employee commitment; thus, the need to examine commitment for clinical laboratory science professionals. One cannot assume the levels of commitment for other health professionals are the same as for clinical laboratory science practitioners. Additionally, the types of variables and their individual effects on commitment may differ between clinical laboratory scientists and other specific health professionals because of differences in the context of the jobs and the type of organizations and departments in which each professional works.

The literature has demonstrated employees' commitment (or lack thereof) to their work organizations has a variety of important organizational consequences. Several studies report negative correlation between organizational commitment and employee intention to leave the organization, actual turnover, and cognitive withdrawal.<sup>5-8</sup> Prior studies indicate employees with strong affective commitment to the organization work harder at their jobs and perform better than those with lower levels of affective commitment.<sup>6,9-12</sup>

Relative to allied health professionals, many studies have been conducted since the 1970s to examine career satisfaction and self-reported intent to remain in the profession for clinical laboratory practitioners. Based on the authors' literature review, there have been only a few studies of clinical laboratory science professionals which examined the relationship between various job aspects controllable by employers and levels of organizational affective, normative, and continuance commitment based on the Meyer and Allen conceptualization.

A study of 456 working and nationally certified radiologic technologists found only moderate levels of normative, affective, and continuance organizational commitment. The radiologic technologists' responses indicated increased levels of organizational support had the greatest positive effect on both normative and affective commitment compared to other work site and demographic characteristics.<sup>13</sup> In a study of 119 South African radiologic technologists, five of six workplace characteristics denoting a supportive work environment were found to correlate significantly with all three dimensions of organizational commitment.<sup>14</sup> Hence, a supportive work environment appears to enhance workplace organizational commitment for these allied health professionals.

In a sample of 250 employed medical technologists, satisfaction with career enrichment benefits correlated significantly

with affective organizational commitment. Such benefits demonstrate the organization's concern for professional development of employees and include release time and funding to attend continuing education programs as well as tuition reimbursement for coursework.<sup>15</sup> Researchers found in a study of 197 medical technologists, level of job satisfaction and affective organizational commitment showed a positive impact on employee participation in organizational development activities which are defined as seminars, workshops, and other learning activities designed to increase organization-relevant skills or information applicable to the employees' workplace.<sup>16</sup> Some studies have used an *occupational* commitment instrument with the same three dimensions of commitment as the Meyer and Allen model.<sup>16,17</sup> A three-year study of 205 medical technologists found affective, normative, and continuance occupational commitment were significantly negatively related to intent to leave the occupation of clinical laboratory science as was certification attainment.<sup>17</sup>

**PURPOSE OF STUDY**

With the retirement of the baby boomers over the next two decades and the numbers of clinical laboratory science professionals graduating per year, it appears a substantial deficit in the workforce for this field will exist into the foreseeable future. In light of this workforce shortage,<sup>18-20</sup> having clinical laboratory science professionals who are committed to their employing organizations is increasingly important as such commitment has been demonstrated to have a positive impact on employees' retention, intent to stay, and job satisfaction.<sup>5-8,16,17</sup> Yet, a paucity of research on the organizational commitment of clinical laboratory science practitioners exists, particu-

larly as related to the Meyer and Allen conceptualization of organizational commitment. Knowledge of factors that may predict (or limit) employees' commitment to their workplace could be used by clinical laboratory managers to better direct strategies to improve retention of their CLS employees.

To gain such information, a national survey was conducted of a sample of baccalaureate-degree clinical laboratory science professionals holding national certification and employed full-time in clinical laboratory settings. The purpose of this study was to determine the predictive ability of selected organizational, leadership, work role, and demographic variables on the Allen and Meyer components of organizational commitment for the sample of clinical laboratory science practitioners. The study was approved

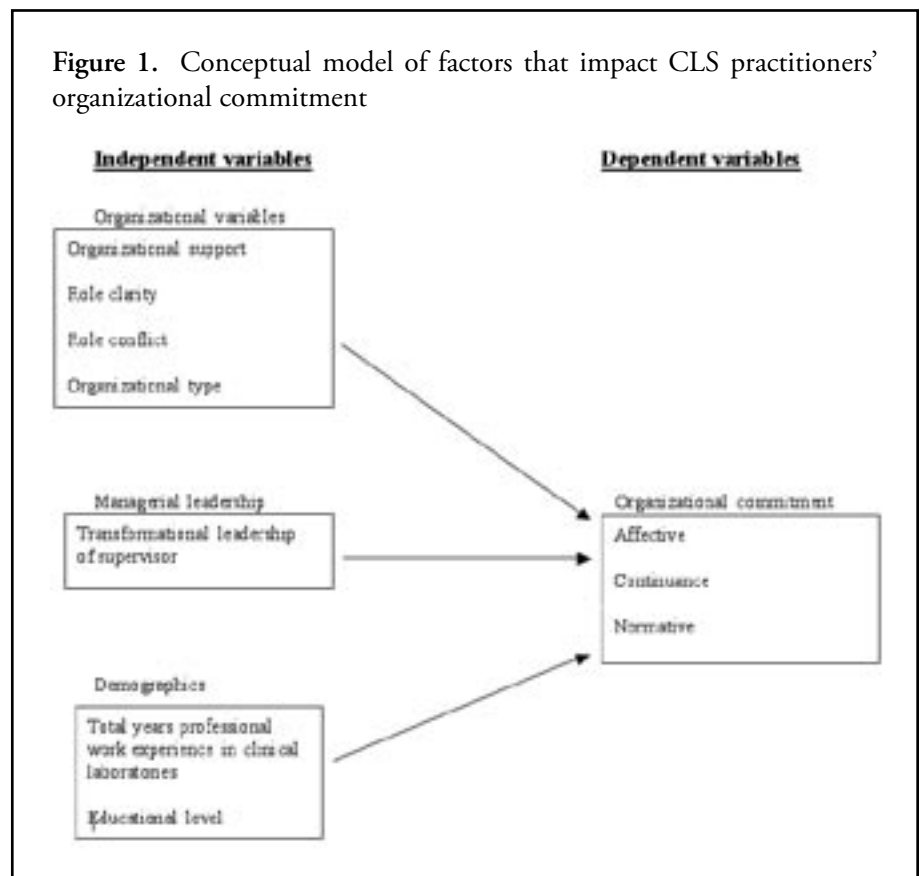
by the appropriate institutional review board for human subject research as an exempt study.

**MATERIALS AND METHODS**

**Study design and variables**

The study used a cross-sectional predictive research design.<sup>21</sup> The dependent variables in this study consisted of the three components of organizational commitment (affective, continuance, and normative) as conceptualized by Meyer and Allen.<sup>1</sup> Based on previous research using the Meyer and Allen survey items with clinical laboratory scientists and other allied health professionals, selected organizational (organizational support, role clarity, role conflict), managerial leadership (transformational leadership behavior of supervisor), and demographic variables (years of work experience in the profession, current type of workplace

**Figure 1.** Conceptual model of factors that impact CLS practitioners' organizational commitment



organization, current position, education level, additional certifications) were selected as possible predictors of the three components of organizational commitment.<sup>13-17</sup> The selected independent variables all had existing measurement questionnaires with established validity and reliability assessments as well as confirmatory analyses.<sup>22-28</sup> These variables resulted in the conceptual framework for the study displayed in Figure 1.

**Sample**

The sample for this study consisted of all persons obtaining the Clinical Laboratory Scientist (CLS) certification from the National Credentialing Agency for Laboratory Personnel between January 1, 1997 and December 31, 2006. This 10-year period resulted in a total of 2,136 CLS practitioners. The first mailing of the survey with explanatory cover letter, resulted in 646 mailings returned with no forwarding address; thus, reducing the sample size to 1,985. The requirement for inclusion in the final sample used for analysis was that each participant worked full time in a clinical laboratory setting.

**Research instrument**

The research questionnaire consisted of four sections. The specific items (questions) for each variable measured can be seen in Appendix 1.

The first questionnaire section measured the three organizational variables: organizational support, role clarity, and role conflict. All three of the organizational variables used a 7-point Likert response scale (1=Strongly disagree to 7=Strongly agree with 4=Neither agree nor disagree). The organizational support variable was measured using the Survey of Perceived Organizational Support (SPOS) scale developed by Eisenberger, Huntington, Hutchison and Sowa.<sup>21</sup> The SPOS uses the sum of the scores of eight items with scores ranging from 8 to 56, and scores above 32 indicating higher levels of perceived organizational support. Role clarity and role conflict were measured using an instrument developed by Rizzo, House, and Lirtzman. Role clarity, or lack of ambiguity, was measured by six items with scores ranging from 6 to 42, and scores above 24 indicating higher levels of role clarity (or lower levels of role ambiguity). Role conflict was measured by eight items with scores ranging from 8 to 56, and scores above 32 indicating higher levels of role conflict. All role conflict items are worded to indicate incompatibility in job requirements versus workplace environment.<sup>27</sup>

The second section measured the managerial leadership variable: transformational leadership behavior of supervisor. This

variable was measured by the 20-item Multifactor Leadership Questionnaire (form 5x short) from Avolio, Bass, and Jung.<sup>28</sup> “Transformational leaders influence followers’ organizational commitment by encouraging followers to think critically by using novel approaches, involving followers in decision-making processes, inspiring loyalty, while recognizing and appreciating the different needs of each follower to develop his or her personal potential.”<sup>28</sup> The questionnaire used a 5-point Likert response scale (0=Not at all to 4=Frequently if not always) for respondents to assess their supervisor’s leadership behavior. The summed score can range from 0 to 80, and scores above 40 indicate higher levels of transformational leadership behavior of the supervisor as perceived by the employee.<sup>28</sup>

The third section measured each of the three dimensions of organizational commitment: affective, continuance, and normative. These variables were measured using the scales developed by Meyer and Allen.<sup>1</sup> This component of the survey instrument consisted of Likert response scale items (1=Strongly disagree to 7=Strongly disagree with 4=Neither agree nor disagree) with each dimension measured by 6 items. The summed scores for each component of commitment were used for analysis and the minimum score possible for each dimension of commitment is 6 and the maximum score is 42 with higher summed scores indicating higher levels of the specific type of commitment, particularly for summed scores above 24. The psychometric properties (validity and reliability) of the instrument are well documented by Meyer and Allen.<sup>1</sup> They document numerous studies which conducted exploratory and confirmatory factor analyses providing evidence of the three-component factor structure of their conceptualization of organizational commitment.<sup>6,7</sup>

The fourth section of the survey instrument consisted of demographic and work position questions. Based on results from previous research using the Meyer and Allen instrument,<sup>1</sup>

**Table 1.** Total scores for affective, continuance, and normative commitment

Commitment	Mean	S.D.*
Affective	23.4	9.2
Continuance	23.8	8.6
Normative	22.5	9.1

\*S.D. is standard deviation

only a few of these workplace characteristics, some with collapsed response categories, were analyzed as predictors of organizational commitment.

**Data analysis**

Multiple regression analysis was performed to determine the variance in each dependent variable (affective commitment, continuance commitment, and normative commitment) accounted for by the linear combination of independent variables. Additionally each regression model was examined to determine which independent variables were significant predictors of each component of commitment. Finally, the magnitude of the contribution of each independent variable was examined to determine which independent variable(s) contributed the most to each component of organizational commitment. The data was entered into a SAS database and all analysis was performed in SAS software version 9.0.

**RESULTS**

The 1,985 questionnaires that were not returned for “no forwarding address” were mailed a second follow-up cover letter and survey. After eliminating respondents who were not currently working full-time in a clinical lab or were in teaching positions, a total of 427 questionnaires were usable for a 22% response rate. The first 100 respondents were compared to the last 100 respondents on each of the components of organizational commitment as well as age, years worked as a CLS since graduation, years employed with current employer, and average hours worked per week. Using a wave analysis technique,<sup>29</sup> t-tests were used to compare the early versus late respondents, and no significant differences in means between the groups was found at =.05.

**Demographics of respondents and descriptive results**

Of the 427 respondents the majority were female (86%) and the mean age was 34.8 years. Current work site (i.e., organizational type) was predominantly hospitals (81%) with 9% in

reference labs, 3% in physician office labs, and 2% each in public health labs and regional blood bank labs. The respondents worked an average of 43 hours per week. The majority of respondents (86%) held a bachelors degree as their highest degree. Staff

**Table 2.** Regression results for affective, continuance and normative commitment models

Independent variables	Organizational Affective		Commitment Continuance		Component Normative	
	b	B	b	B	b	B
Organizational support	0.31*	0.40*	-0.08	-0.11	0.37*	0.49*
Role ambiguity	0.02	0.02	0.01	0.01	-0.13	-0.09
Role conflict	-0.01	-0.01	0.07	0.09	0.05	0.06
Organizational type	-1.14	-0.04	-3.61*	-0.16*	-0.76	-0.03
Transformational leadership	0.11*	0.25*	0.01	0.01	0.13*	0.32*
Total years work experience in clinical laboratories	0.01	-0.01	0.01*	0.10*	-0.01	-0.06
Education	1.49	0.06	-1.49	-0.06	0.49	0.02
Model information						
R <sup>2</sup>	R <sup>2</sup> = 0.36		R <sup>2</sup> = 0.06		R <sup>2</sup> = 0.41	
F	27.5		2.97		33.1	
p	<.0001		.0050		<.0001	
b = unstandardized regression coefficient, B = standardized regression coefficient						
* p < .05						



positions were currently held by 78% of the respondents. MT(ASCP) certification, in addition to their CLS certification with NCA, was held by 73% of respondents.

The mean levels of affective and continuance commitment were about the same with normative commitment being slightly lower than the other two (Table 1). Overall CLS perceptions of their affective commitment and continuance commitment were close to the base score of “neutral” (4.0 - 4.9) on the 7-point scale. The mean item score for normative commitment was 3.75 which is in the range of “Slightly disagree” on the 7-point scale. The mean item scores for affective commitment and continuance commitment were 3.90 and 3.97, respectively, which are close to a “neutral” response (i.e. “Neither agree nor disagree”).

#### Predictors of affective, continuance, and normative organizational commitment

The multiple regression results are displayed in Table 2. This analysis evaluated the influence of organizational support, role ambiguity, role conflict, organizational type, transformational leadership behavior of supervisor, total years work experience in clinical laboratories, and educational level on each component of organizational commitment. The independent variables evaluated were all numeric data with the exception of organizational type (coded as Hospital=1, Non-hospital=0) and educational level (coded as BS=1, graduate degree=2) where response choices were collapsed to 2 categories for each variable for statistical analysis. For the multiple regression results, statistical significance was set at  $p \leq .05$ .

For affective commitment, 36% of the observed variance was accounted for by the linear combination of the independent variables ( $F(427) = 27.45, p < .0001, R^2 = .36$ ). Unstandardized regression coefficients (b) were reviewed to assess the relative importance of the seven independent variables in the prediction of affective commitment. Organizational support and transformational leadership of the supervisor exhibited statistically significant and positive coefficients for prediction of affective commitment. The magnitude of the effect of each significant independent variable on affective commitment may be assessed by the size of its standardized regression coefficient (B). Organizational support contributed the greatest amount to the variance in affective commitment ( $B = .40$ ) followed by transformational leadership ( $B = .25$ ). Thus, high levels of organizational support and transformational leadership behavior of supervisors promotes greater levels of affective commitment (i.e., remain with employer because they *want* to) for the working clinical laboratory scientists who responded.

For continuance commitment, six percent of the observed variance was accounted for by the linear combination of the independent variables ( $F(427) = 2.97, p = .0050, R^2 = .06$ ). Organizational type for current employer and total years work experience in clinical laboratories exhibited statistically significant coefficients for prediction of continuance commitment. Respondents who worked in hospital settings had lower levels of continuance commitment ( $B = -.16$ ), while increasing years of professional work experience predicted higher levels of continuance commitment ( $B = .10$ ). It should be noted that the regression model, while significant, only predicted six percent of the variance in continuance commitment; therefore, the predictive ability of the model is somewhat limited. Though weak predictors, working in a clinical laboratory setting NOT in a hospital and many years work experience in clinical laboratories promotes greater levels of continuance commitment (i.e., remain with employer because they *need* to) for the working clinical laboratory scientists who responded.

For normative commitment, 41% of the observed variance was accounted for by the linear combination of the independent variables ( $F(427) = 33.10, p < .0001, R^2 = .41$ ). Organizational support and transformational leadership of the supervisor exhibited statistically significant and positive coefficients for prediction of normative commitment. Organizational support contributed the greatest amount to the variance in normative commitment ( $B = .49$ ) followed by transformational leadership behavior of supervisor ( $B = .32$ ). Thus, high levels of organizational support and transformational leadership behavior of supervisors appear to be associated with higher levels of normative commitment (i.e., remain with employer because they *ought* to) for the working clinical laboratory scientists who responded.

#### DISCUSSION

Based on mean ratings for all three dimensions of organizational commitment, this sample of clinical laboratory scientists currently employed in clinical laboratories indicated a low to neutral level of commitment to their employing organizations. In essence, the respondents do not feel a high level of identification with and emotional attachment to their organizations (affective commitment) or a high level of feeling obligated to stay with their organization (normative commitment), and they do not appear to feel the costs of leaving their organizations warrant a high level of organizational commitment (continuance commitment). As 81% of the respondents were working in hospital laboratories, these results indicate a less than optimal level of commit-

ment which may translate into problems with employee retention in this setting. As hospitals are the main employer of CLS practitioners, this does not indicate a positive future for staffing in hospital laboratories. This is compounded by the mean age of the respondents being 34.8 years, a time when some CLS practitioners begin looking more closely at longevity with an employer.

For each dimension of organizational commitment measured, the linear combination of the independent variables was found to account for a statistically significant percent of the variance in the specific commitment dimension based on the *F* value at  $p < .05$ . The independent variables combined predicted a higher percent of the variance in affective commitment (want to stay) and normative commitment (ought to stay or loyalty), 36% and 41% respectively, but a much lower percent of variance (6%) for continuance commitment (need to stay). Levels of organizational support and transformational leadership behavior of supervisor were the better predictors for both affective and normative commitment, while being employed in a setting other than a hospital laboratory and total years of professional work experience were better, though weaker, predictors of continuance commitment. These results, again, appear to indicate a less than optimal level of organizational commitment for respondents working in hospital laboratories, particularly for those with higher years of work experience. The results also indicate a less than optimal level of attachment and obligation to their employer organizations for these CLS respondents, the majority of who currently work in hospital laboratories. Interestingly, role clarity and conflict were not found to be significant predictors of any dimension of organizational commitment.

The results of this study are similar to those found in other studies done with allied health professionals and using the Meyer and Allen organizational commitment instrument. In a nationwide study of radiographers, organizational support was a statistically significant predictor of affective and normative commitment.<sup>13</sup> In studies of clinical laboratory professionals, results have included satisfaction with career enrichment benefits of employers, an organizational support strategy, as a significant predictor of affective commitment,<sup>15</sup> a positive association between affective commitment and participation in development activities applicable to the workplace,<sup>16</sup> and a negative relation between higher levels of affective, normative and continuance occupational commitment as measured by a modified version of the Meyer and Allen instrument, with intent to leave the clinical laboratory science profession.<sup>17</sup>

The Meyer and Allen instrument measures organizational commitment by questions as to the employee's perception of his/her employer's expression of concern, value, appreciation and caring for the employee. The results of this study, along with previous research using the Meyer and Allen construct and instrument, indicate a supportive work environment (i.e., organizational support) as through various benefits and behaviors showing concern for the employee and their workplace satisfaction, is associated with higher levels of affective commitment and also sometimes normative commitment. Transformational leadership behaviors of supervisors such as including employees in solving problems, talking optimistically about the future, spending time teaching and coaching, instilling pride in accomplishments by the employees, treating employees as individuals and not simply as members of a group, helping employees develop their strengths, developing a collective sense of organizational mission, and supporting unique characteristics and strengths of each employee, was found in this study to be a positive predictor of both affective and normative commitment, or an attachment and obligation to remain with the employer organization. Transformational leadership could be considered as one aspect of overall organizational support.

## CONCLUSIONS

The study results reaffirm that a clinical laboratory work environment with strong organizational support and supervisors who demonstrate transformational leadership behaviors promote more organizational commitment by its laboratory employees. Such a work environment entails not only affective behaviors, or specific personality traits of organizational and department leaders, but also more concrete strategies. Hopefully, the combined research in this area will encourage clinical laboratory managers as well as hospital administrators to invest more dollars into clinical laboratories for activities such as employee travel to professional meetings and continuing education programs, reimbursement for relevant graduate coursework, and recognition for obtaining specialist certifications as well as advancement for employees taking on extra projects such as quality control accountability, meeting with nursing staff to problem-solve, and, at the least, daily expression by supervisors of individual concern for employees and their work satisfaction and well-being.

This study's results are limited in generalizability by the small sample size and inclusion of only clinical laboratory practitioners currently working and who hold the baccalaureate or higher degree and a specific certification, which is less than representative of a national population of clinical

laboratory practitioners. In light of the organizational commitment responses being more in the neutral or disagree area and the fact participation was voluntary, dissatisfied practitioners may have been more likely to participate than satisfied employees resulting in a response bias. Future research as to organizational commitment of clinical laboratory practitioners conducted by a national professional organization or task force may be more likely to obtain a higher level of participation from a national, random sample than the authors achieved.

*Clin Lab Sci encourages readers to respond with thoughts, questions, or comments regarding this article. Email responses to ic.ink@mchsi.com. In the subject line, please type "CLIN LAB SCI 21(3) RR BAMBERG". Selected responses will appear in the Dialogue and Discussion section in a future issue. Responses may be edited for length and clarity. We look forward to hearing from you.*

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**Appendix 1.** Research survey items for each variable in study. Actual formatting and appearance of survey was different than it appears below.

Organizational variables (organizational support, role clarity, role conflict)

INSTRUCTIONS: Please indicate your response by checking the box that best represents your point of view about your place of employment.

Response choices:	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
Value for scoring:	1	2	3	4	5	6	7

Organizational support:

1. The hospital/clinic values my contribution to its well-being.
2. The hospital/clinic fails to appreciate any extra effort from me.
3. The hospital/clinic would ignore any complaint from me.
4. The hospital/clinic really cares about my well-being.
5. Even if I did the best job possible, the hospital/clinic would fail to notice.
6. The hospital/clinic cares about my general work satisfaction.
7. The hospital/clinic shows very little concern for me.
8. The hospital/clinic takes pride in my accomplishments at work.

\* Items 2, 3, 5, and 7 were reverse coded for data entry to comply with higher score = higher organizational support.

Role clarity (or lack of role ambiguity):

1. I feel certain about how much authority I have.
2. I have clear, planned goals and objectives for my job.
3. I know that I have divided my time properly.
4. I know what my responsibilities are.
5. I know exactly what is expected of me.
6. Explanation is clear for me of what has to be done.

Role conflict:

1. I have to do things that should be done differently under different conditions.
2. I receive a task without the manpower to complete it.
3. I have to break a rule or policy in order to carry out a task.
4. I work with two or more groups who operate quite differently.
5. I receive incompatible requests from two or more people.
6. I do things that are apt to be accepted by one person and not by others.
7. I receive a task without adequate resources to execute it.
8. I work on unnecessary things.

Transformational leadership behavior of supervisor variable

INSTRUCTIONS: For your immediate supervisor, how often does he or she exhibit the following behaviors?

Response choices:	Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always
Value for scoring:	0	1	2	3	4

1. Re-examines critical assumptions to question whether they are appropriate.
2. Talks about his/her most important values and beliefs.
3. Seeks differing perspectives when solving problems.
4. Talks optimistically about the future.

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5. Instills pride in me for being associated with him/her.
6. Talks enthusiastically about what needs to be accomplished.
7. Specifies the importance of having a strong sense of purpose.
8. Spends time teaching and coaching.
9. Goes beyond self-interest for the good of the group.
10. Treats me as an individual rather than just as a member of a group.
11. Acts in ways that builds my respect.
12. Considers the moral and ethical consequences of decisions.
13. Displays a sense of power and confidence.
14. Articulates a compelling vision of the future.
15. Considers me as having different needs, abilities, and aspirations from others.
16. Gets me to look at problems from different angles.
17. Helps me to develop my strengths.
18. Suggests new ways of looking at how to complete tasks.
19. Emphasizes the importance of having a collective sense of mission.
20. Expresses confidence that goals will be achieved.

### Organizational commitment variables (normative, affective and continuance)

INSTRUCTIONS: Statements below represent possible opinions that you may have about the hospital/clinic for which you work. Please indicate your response by checking the appropriate box.

Response choices:	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
Value for scoring:	1	2	3	4	5	6	7

#### Normative commitment:

1. I do not feel any obligation to remain with my current employer.
2. Even if it were to my advantage, I do not feel it would be right to leave my hospital/clinic now.
3. I would feel guilty if I left my hospital/clinic now.
4. This hospital/clinic deserves my loyalty.
5. I would not leave my hospital/clinic right now because I have a sense of obligation to the people in it.
6. I owe a great deal to my hospital/clinic.

\* Item 1 was reverse coded for data entry to comply with higher score = higher normative commitment.

#### Affective commitment:

1. I would be very happy to spend the rest of my career in this hospital/clinic.
  2. I really feel as if this hospital/clinic's problems are my own.
  3. I do not feel a strong sense of belonging to my hospital/clinic.
  4. I do not feel "emotionally attached" to this hospital/clinic.
  5. I do not feel "part of the family" at my hospital/clinic.
  6. This hospital/clinic has a great deal of personal meaning for me.
- \* Items 3, 4, and 5 were reverse coded for data entry to comply with higher score = higher affective commitment.

#### Continuance commitment:

1. I believe that I have too few options to consider leaving this hospital/clinic.
2. If I had not already put so much of myself into this hospital/clinic, I might consider working elsewhere.
3. One of the few negative consequences of leaving this hospital/clinic would be the scarcity of available alternatives.
4. Right now, staying with my hospital/clinic is a matter of necessity, as much as desire.
5. It would be very hard for me to leave my hospital/clinic right now, even if I wanted to.
6. Too much of my life would be disrupted if I decided I wanted to leave my hospital/clinic now.

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### Other Information variables (not all were used in analyses)

INSTRUCTIONS: Please answer the following questions regarding personal attributes and work history.

1. What is your age in years? \_\_\_\_\_
2. What is your gender?  Male  Female
3. How long have you worked as a CLS since graduation? \_\_\_years and \_\_\_months
4. What is your current work status?  Full-time  Part-time  As Needed  Retired  Not Working  Changed Professions
5. Where is your primary place of employment?  Hospital Lab  Reference Lab  Public Health Lab  
 Blood Bank Center Lab  Physician Office Lab  Hospital Infection Control Unit  Biotech Company  
 Crime Lab  Educational Institution
6. How long have you been employed at your current place of employment? \_\_\_years and \_\_\_months
7. Which category best describes your current position?  Staff CLS  Section Supervisor  Chief Technologist  
 Lab Manager/Administrative Director  Education Coordinator  CLS Program Faculty  
 CLS Program Director  Other (specify: \_\_\_\_\_)
8. How many hours, on average, do you work per week? (include average over-time) \_\_\_hours
9. What is your highest level of educational attainment?  Bachelor's Degree  Master's Degree  PhD or EdD  MD or DO
10. Are you also MT(ASCP) certified?  Yes  No

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