

Work-Related Communication Technology Use Outside of Regular Work Hours and Work Life Conflict: The Influence of Communication Technologies on Perceived Work Life Conflict, Burnout, Job Satisfaction, and Turnover Intentions

Management Communication Quarterly
2014, Vol. 28(4) 507–530
© The Author(s) 2014
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0893318914533332
mcq.sagepub.com



**Kevin B. Wright¹, Bryan Abendschein²,
Kevin Wombacher³, Michaela O'Connor⁴,
Megan Hoffman⁴, Molly Dempsey⁴,
Christopher Krull⁴, Audrey Dewes⁴,
and Audrey Shelton⁴**

Abstract

The purpose of this study was to investigate employee perceptions of the influence of communication technology use outside of regular work hours on perceptions of work life conflict, burnout, turnover intentions, and job satisfaction. An online survey of 168 employees from more than 30 companies in a Midwestern city was conducted to assess relationships among these

¹George Mason University, Fairfax, VA, USA

²University of Illinois at Urban–Champaign, IL, USA

³University of Kentucky, Lexington, KY, USA

⁴Saint Louis University, MO, USA

Corresponding Author:

Kevin B. Wright, Department of Communication, George Mason University,
4400 University Drive, 3D6, Fairfax, VA 22030, USA.

Email: kwright16@gmu.edu

variables. The results indicated that hours of work-related communication technology use outside of regular work hours contributed to perceptions of work life conflict. However, positive attitudes toward communication technologies predicted decreased work life conflict. Controlling for worker age, perceived life stress, and attitudes toward communication technologies, work life conflict was found to predict job burnout and job satisfaction, but not turnover intentions. The authors discuss implications of the study findings for management practices, limitations of the study, and directions for future research.

Keywords

burnout, stress, communication technology use, work/life

The advent of communication technologies has led to profound changes in the workplace (Boswell & Olson-Buchanan, 2007; Kossek & Lautsch, 2012), and while these technologies offer advantages to employees and organizations in terms of cost saving and greater flexibility in completing work-related tasks, they can also have a negative impact in terms of stress, burnout, and turnover intentions. As employees begin to use communication technologies for work-related tasks more frequently during their free time, this may contribute to an increase in work life conflict as well as related outcomes, such as job satisfaction, stress, and burnout. Kossek and Lautsch (2008) contend that boundaries between work and family are increasingly blurring, as employees are increasingly self-managing work by responding to emails, texts, or calls via smartphones during personal time on weekends or when they are on vacation. Moreover, the use of iPhones, Blackberries, laptops, and other devices has led to increased connectivity between employees and employers, and this has made the boundaries between work and home more porous (Perlow, 1998). Researchers are beginning to find that instead of eliminating work life conflicts, these technologies “can turn homes into electronic work cottages, expanding work into family time, and the reverse” (Kossek & Lautsch, 2008, p. 153).

The relationships among use of communication technologies outside of the workplace, work life conflict, worker stress, burnout, and employee turnover have important implications for managers (Kelly, Moen, & Tranby, 2011; Kossek, Lewis, & Hammer, 2010; Kreiner, Hollensbe, & Sheep, 2009). Managers would benefit from a better understanding of how communication technologies contribute to work life conflict among their employees, especially during traditional worker free time, such as nights and weekends. An

increased understanding of the ways in which work life conflict (stemming from greater connectivity with the workplace) contributes to negative outcomes, such as employee dissatisfaction, stress, and burnout, may help managers enact policies that can reduce work life conflict and potentially avoid or reduce these outcomes. Boyd, Lewin, and Sager (2009) estimate that such outcomes can cost organizations up to US\$300 billion annually in the United States alone.

Although a number of communication scholars have examined the role of communication technology use in work life conflict (Edley, 2001; Fonner & Roloff, 2010, 2012; Golden & Geisler, 2007; Hoffman & Cowan, 2008; Hylmö, 2006; Kirby, Wieland, & McBride, 2006, 2012), relatively few communication studies have focused on how perceptions of work life conflict stemming from increased connectivity (via technology) with the workplace during employees' free time may influence stress, burnout, job satisfaction, and turnover intentions among employees.

Burnout among workers has been identified as a major problem in a variety of organizational settings (Aiken, Clarke, Sloane, Sochalski, & Silbner, 2002; Apker & Ray, 2003; Maslach, 2003; McManus, Winder, & Gordon, 2002), often resulting in absenteeism, reduced quality of job performance, and higher organizational costs (Aiken et al., 2002; Maslach, 2003). Job burnout has also been linked to turnover intentions and actual employee turnover (Buunk, Schaufeli, & Ybema, 1994; Maslach, 2003). In addition, job burnout has been linked to emotional exhaustion and depersonalized feelings toward customers and coworkers (Maslach, 1982, 2003) and increased psychological and physical health problems, including substance abuse (Aiken et al., 2002).

Increased connectivity with work via technology may contribute to stress and burnout when organizational norms regarding when it is appropriate to contact employees via technology during their free time and the amount and quality of work that is expected from them during these times are unclear (Peeters, Montgomery, Bakker, & Schaufeli, 2005). Although communication technologies can allow for greater flexibility in managing work demands (Edley, 2001), they may give employees little time to disengage from the workplace, especially if the stress of work-related issues interferes with a worker's ability to enjoy time with family and friends (Boswell & Olson-Buchanan, 2007; Kossek & Lautsch, 2008, 2012).

However, prior research has not sufficiently studied the influence of communication technology use on work life conflict, especially the ways that technology-related work life conflict outside of traditional work hours may affect organizational outcomes such as employee burnout, job satisfaction, and turnover intentions. Given the economic and personal implications of

these outcomes for employees and managers, there is a need for improved research and theory to advance our understanding regarding the potential negative effects of technology-related work life conflict on employees (Kossek & Lautsch, 2012; Leonardi, Treem, & Jackson, 2010; Stephens, Cho, & Ballard, 2012). Such an understanding may help managers to develop clear expectations and policies that can facilitate ways for employees to better cope with work life conflict in an effort to avoid or reduce negative outcomes such as job stress, dissatisfaction, burnout, and turnover intentions (Kelly et al., 2011).

The purpose of this study was to build upon previous work by investigating the influence of communication technology use (outside of regular work hours) on employee perceptions of work life conflict, burnout, turnover intentions, and job satisfaction. Toward that end, the following sections review literature on communication technologies and work life conflict, and three outcome variables (job burnout, job satisfaction, and turnover intentions). This is followed by a report of a study that explores relationships among these variables as well the implications of the study findings for employees and managers, limitations of the study, and directions for future research.

Review of Literature

Communication Technologies and Work Life Conflict

Work life conflict has emerged as a significant area of research among social scientists in recent years, including communication scholars (Janssen, Peeters, de Jonge, Houkes, & Tummers, 2004; Kirby et al., 2006, 2012; Kossek & Lautsch, 2008, 2012; Shumate & Fulk, 2004). Competing demands between work and home have become more relevant for employees due to demographic changes in the workplace, such as rising numbers of women in the labor force, an aging population, longer working hours, and more sophisticated communication technologies that enable nearly constant contact with the workplace. However, conceptualizing work life conflict can be somewhat complex, and a number of researchers have conceptualized and operationalized work life conflict in a variety of ways (see Cowan & Hoffman, 2007; Edley, 2001; Golden & Geisler, 2007; Hayman, 2005; Shumate & Fulk, 2004).

Several communication scholars have argued that work and life roles are established by communicative interaction (Kirby, Golden, Medved, Jorgenson, & Buzzanell, 2003; Kirby et al., 2006, 2012; Shumate & Fulk, 2004). As Shumate and Fulk (2004) contend, "Communication is necessary

not only for establishing roles, but also maintaining boundaries among an individual's multiple roles" (p. 58). In situations where organizations do not have clear rules or expectations regarding the use of communication technologies to perform work-related tasks during an employee's free time, this can lead to role ambiguity and increased stress/dissatisfaction (Shumate & Fulk, 2004; Stephens et al., 2012). In addition, managers may not always have a clear understanding of the extent of employees' work-related technology use outside of "official" work hours and its impact on outcomes such as stress and burnout (Kossek et al., 2010; Leonardi et al., 2010).

Researchers have argued that work life conflict typically takes two different forms: (a) work obligations interfere with family responsibilities and (b) family responsibilities interfere with work obligations (Kossek & Ozeki, 1998). Both forms of work life conflict have been linked to negative outcomes for employees, including increased stress and burnout, higher absenteeism, physical and mental health problems, reduced job satisfaction, and employee turnover intentions (Burke & Greenglass, 1999; Frone, 2000; Martins, Eddleston, & Veiga, 2002; Netemeyer, Boles, & McMurrian, 1996). These outcomes often lead to a variety of problems for managers, including financial costs, inefficient use of time, and inefficiency in terms of meeting larger organizational goals (Kossek & Lautsch, 2012).

Several scholars further distinguish between work-to-family conflict (WFC) and family-to-work (FWC) conflict (Bagger & Li, 2012; Frone, Russell, & Cooper, 1992, 1997). According to Bagger and Li (2012), WFC

refers to conflict caused by demands from the work domain that limits one's ability to meet responsibilities in the family, whereas FWC [family-to-work conflict] refers to conflict caused by demands from the family domain that limits one's abilities to meet responsibilities at work. (p. 474)

For the purposes of the current study, similar to Boswell and Olson-Buchanan's (2007) work, we focus on work life conflict that arises from the use of communication technologies to connect with supervisors or coworkers outside of regular work hours (e.g., during a worker's free time). This includes emails, texts, Skype conversations, and other forms of technology-enabled communication modalities that connect people to work or allow them to perform work-related tasks beyond regular business hours (e.g., nights and weekends, or other times when a person is not officially "on the clock").

Several quantitative measures of work life conflict have been developed in recent years. For example, Golden and Geisler (2007) created a work life conflict index by calculating the ratio of work-related items to life-related items among workers who engaged in job-related activities outside of the

workplace. In addition, Hayman (2005) created a self-report measure that assesses individual perceptions of the degree to which work-related tasks/responsibilities interfere with a person's home life. As these instruments do not measure dynamic aspects of how work life boundaries are negotiated through interaction, the focus of the current study was limited to individual perceptions of the degree to which workers feel that work responsibilities (via communication technologies) interfere with their free time outside of regular work hours.

Communication technologies appear to contribute to employee feelings of perpetual connectedness with the workplace, and several scholars contend that they blur the lines that once spatially separated work life and family life for some workers (Davis, 2010; Jarvenpaa & Lang, 2005; Perlow, 1998; Stephens et al., 2012). For example, Leonardi et al. (2010) found that workers often experience a sense of reduced control over work due to nearly ubiquitous technology-assisted communication with the office. This lack of control is often due to unanticipated work-related emails and text messages as well as unclear expectations regarding norms for responding to such interruptions during free time, which appears to increase employee stress. At the same time, many managers are just beginning to understand the impact of communication technologies on work life conflict, and it appears that relatively few organizations have formal policies for helping workers cope with the stress of being almost perpetually connected to the workplace (Leonardi et al., 2010).

Yet, there is some evidence that communication technology use outside of regular work hours may elevate employee stress levels (Ayyagari, Grover, & Purvis, 2011; Fonner & Roloff, 2012). Ayyagari et al. (2011) identified work overload and role ambiguity as technology-driven stressors resulting from the excessive use of communication technologies, stating that "constant connectivity provided by information and communication technologies increases the workload by enhancing the speed of work flow and expectations of productivity" (p. 848). These authors call for more research on characteristics of technology that can lead to increased levels of stress and related outcomes such as job burnout, while some scholars contend that technological stressors (i.e., constant connectivity to the workplace) may affect both job satisfaction and emotional exhaustion (Beam, Kim, & Voakes, 2003; Leonardi et al., 2010).

Previous researchers have further noted that boundaries (e.g., physical, temporal, social, behavioral) serve to demarcate the various roles individuals maintain in different domains, including work and home (Cowan & Hoffman, 2007; Edley, 2001; Golden & Geisler, 2007). Although communication technologies may allow for greater work life integration (Valcour & Hunter, 2005),

finding a balance between work life and home life is not an easy task for many employees (Hoffman & Cowan, 2008; Kossek & Lautsch, 2012). While communication technologies may give managers the opportunity to increase the work potential from employees outside of traditional work hours, they may also contribute to decreases in employee satisfaction with work (Gajendran & Harrison, 2007). This appears to be the case when employers ask workers (via communication technologies) to perform work-related tasks that interrupt or distract employees during their free time (Fonner & Roloff, 2010; Kossek & Lautsch, 2012; Mazmanian, Orlikowski, & Yates, 2013). Accordingly, we expect that the greater the use of communication technologies after regular work hours, the more one's work role intrudes in, and detracts from, one's personal life, leading to increased work life conflict. Hence,

Hypothesis 1 (H1): As the amount of time using communication technologies for work-related tasks outside of regular work hours increases, work life conflict associated with communication technology use will increase.

Previous studies have found that communication technologies can be perceived both positively and negatively by workers who use them to perform work-related tasks and communicate with coworkers outside of the workplace (Edley, 2001; Fonner & Roloff, 2010, 2012; Gajendran & Harrison, 2007; Kossek & Ozeki, 1998; Shia & Monroe, 2006). In terms of negative perceptions of communication technology outside of regular work hours, researchers have suggested that some employees may view technology as a means for employers to bind workers to ongoing work-related tasks after established work hours, which may lead to increased perceptions of work life conflict (Boswell & Olson-Buchanan, 2007; Kossek & Lautsch, 2012). However, other employees may have more positive perceptions of communication technology use outside of regular work hours, and they may be less concerned with technology-based interruptions during their free time (Fonner & Roloff, 2010; Shia & Monroe, 2006). For these individuals, dealing with a work-related problem at night or on the weekend may be perceived as less of an intrusion into one's personal life than employees who feel that communication technology does not allow them to escape from work. For example, people who view communication technology use more positively may prefer to deal with problems during their free time as opposed to having to deal with them in the workplace (especially if it means having to attend an additional face-to-face meeting during regular work hours).

Previous studies have not specifically examined the relationship between perceptions of communication technology usefulness for work-related tasks

outside of regular work hours and work life conflict, although the literature suggests that those individuals who have negative perceptions of these technologies in the private domain may see them as sources of interruptions or interference compared with those who view these technologies more positively (Fonner & Roloff, 2010; Kossek & Lautsch, 2012). Based on this body of research, the following hypothesis was posed:

Hypothesis 2 (H2): Increases in perceived usefulness of communication technologies for work-related tasks after regular hours will be predictive of decreases in perceptions of work life conflict associated with communication technology use.

Job Stress, Burnout, Job Satisfaction, and Turnover Intentions

Maslach (1982) described job burnout as a condition where meaningful and challenging work becomes unpleasant, unfulfilling, and meaningless. Job burnout has been defined as the draining of mental resources caused by chronic job stress, and it is considered a work-related indicator of psychological health (Schaufeli & Enzmann, 1998). Job burnout is typically characterized as consisting of three components: reduced personal accomplishment, emotional exhaustion, and depersonalization (Maslach, 1982). According to Maslach (1982), burnout can result from unpleasant exchanges with coworkers and clients as well as a negative workplace environment. Job burnout has been linked to a variety of negative outcomes, including absenteeism, poor work performance, and substance abuse (Ellis & Miller, 1994; Kim & Stoner, 2008). These outcomes undermine organizational goals and create numerous problems for managers (including stress and burnout among managers).

In addition, extreme or prolonged work-related stress has been shown to culminate in burnout. Although scholars offer various conceptualizations of burnout, it is typically characterized as consisting of three components: reduced personal accomplishment, emotional exhaustion, and depersonalization (Maslach, 1982). McManus et al. (2002) found that stress was positively related to emotional exhaustion, and depersonalization was predictive of reduced stress. Job burnout has also been linked to decreased job satisfaction and intention to leave the organization in a variety of studies (see Boyd et al., 2009; McFarlane-Shore & Martin, 1989; Schaufeli & Enzmann, 1998). However, Brewer and Shapard (2004) argued that overall life stress and employee age may also influence burnout and intention to leave an organization.

Work life conflict, burnout, turnover intentions, perceived stress, and job satisfaction. Several studies have provided initial evidence for the mediating role of

work life conflict in predicting job burnout, with job-related tasks spilling over into home life and stressors at home influencing work stress (e.g., Geurts, Kompier, Roxburgh, & Houtman, 2003; Janssen et al., 2004). Other researchers have found that work life conflict may only play a partial mediating role, arguing that some demands, such as emails from colleagues and clients, interrupt employee's home time and likely have a direct effect on job burnout (Peeters et al., 2005). Studies also suggest that work life conflict influences job satisfaction and turnover intentions (Boswell & Olson-Buchanan, 2007; Kossek & Ozeki, 1998; Martins et al., 2002).

While researchers have devoted a great deal of empirical attention to work life conflict issues and organizational/individual outcomes, few studies to date have adequately assessed the influence of communication technology use on perceptions of work life conflict and its relationship to perceived stress, burnout, and turnover intentions. Shumate and Fulk (2004) called for researchers to assess the impact of work life conflict on a variety of individual outcomes, including work satisfaction and commitment. Based on previous research examining communication technologies in the workplace, work life conflict, job stress, and their influence on job burnout, turnover intentions, and job satisfaction, the following hypotheses were posed:

Hypothesis 3a (H3a): Controlling for age, perceived stress, and perceived usefulness of communication technology for work-related purposes, increases in work life conflict associated with communication technology use will be predictive of increases in job burnout.

Hypothesis 3b (H3b): Controlling for age, perceived stress, and perceived usefulness of communication technology for work-related purposes, increases in work life conflict associated with communication technology use will be predictive of increased turnover intentions.

Hypotheses 4 (H3c): Controlling for age, perceived stress, and perceived usefulness of communication technology for work-related purposes, increases in perceptions of work life conflict associated with communication technology use will be predictive of decreased job satisfaction.

Method

Participants

Employees from more than 30 companies in a large Midwestern city were contacted by the researchers (using a snowball nonprobability sample—contacts from the authors' university alumni in the city surrounding the university) to complete an online survey questionnaire. These organizations

included seven public relations firms, six advertising firms, five biotechnology companies, four chemical companies, four manufacturing companies, and two accounting firms. All participants were full-time employees. A total of 168 respondents sufficiently completed the questionnaire. Of these, 66% were women and 34% were men. Respondents ranged in age from 23 to 60 with an average age of 37.64 ($SD = 9.78$). In terms of race, 86% of the participants were White, 5% were African American, 4% were Asian American, 3% were Hispanic, and 2% indicated they were of mixed race. The majority of the sample had obtained a bachelor's degree (56%), 35% of the participants reported having a graduate degree, and the remainder had at least some college. In terms of position levels, 23% of the sample reported being at the entry level, 60% indicated they were at the middle management level, and 12% were at the upper management/executive level. The reported positions included account executives, market research analysts, asset managers, executive assistants, general managers, human resource specialists, manufacturing directors, quality control managers, and various other titles.

Measures

Work-related communication technology use outside of regular work hours. In terms of communication technology use for performing tasks outside of regularly defined work hours, all of the respondents indicated that they use some form of communication technology to communicate/perform work tasks with others in their organization outside of regular work hours. Specifically, 89% of individuals indicated they used a laptop, 91% said they used a tablet (i.e., iPad), and 54% of participants mentioned using a smartphone. The most frequent mode of communication was email (92% of respondents), followed by telephone (73%), texting (51%), and Skype (5%). Participants were asked to estimate the number of minutes/hours they spent each week communicating via technologies with supervisors, coworkers, or performing work-related tasks (e.g., answering questions, talking to clients, sharing files) via technology outside of regular work hours ($M = 5.57$ hr; $SD = 5.43$ hr) in addition to an average of 44.23 regular work hours ($SD = 9.44$ hr) per week.

Work life conflict associated with communication technology use. A modified version of Hayman's (2005) work life balance scale was used to assess the influence of communication technology use on work life conflict outside of the workplace (and outside of traditional workplace hours). Hayman's original work life balance scale consists of 15 five-point Likert-type scale items (*strongly agree* = 5; *strongly disagree* = 1), including items such as "My personal life suffers because of work" and "I neglect personal needs because of

work.” In the current study, only the first dimension was used (work interferes with personal life [WIPL]), and the seven items from this dimension were altered to reflect the influence of communication technologies on work life conflict outside of regular workplace hours ($M = 5.57$; $SD = 5.43$; Cronbach’s $\alpha = .96$). Examples of altered items included, “My personal life suffers because of having to ‘check in’ with work online outside of regular work hours” and “I neglect personal needs because of work-related Internet use in my free time.”

Perceptions of communication technology usefulness for work-related purposes (outside of regular work hours). Worker’s perceptions of the usefulness of communication technologies for work-related purposes (outside of regular workplace hours) were measured using the Technology-Assisted Supplemental Work (TASW) scale developed by Fenner and Renn (2010). This measure consists of 6 five-point Likert-type scale items, including “I feel my cell phone, smartphone (i.e., Blackberry, iPhone), is helpful in enabling me to work at home at night or on the weekends” and “I tend to leave my cell phone or smartphone (i.e., Blackberry, iPhone) turned off for work-related tasks when I return home from work at night (reverse coded)” ($M = 13.80$; $SD = 5.10$; Cronbach’s $\alpha = .87$).

Perceived job burnout. The Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996) was used to measure perceived job burnout. This measure consisted of 20 five-point Likert-type scale items, and it includes statements such as “I feel emotionally drained from my work” and “I have become more callous toward people since I took this job.” The researchers were interested in assessing overall burnout scores as opposed to examining individual factors contributing to burnout ($M = 67.31$; $SD = 11.5$; Cronbach’s $\alpha = .89$).

Job satisfaction. Overall job satisfaction was assessed using Brayfield and Rothe’s (1951) job satisfaction measure. This five-item measure uses a five-point Likert-type scale and consists of items such as “Most days I am enthusiastic about work” and “Each day at work seems like it will never end (reverse coded)” ($M = 11.90$; $SD = 3.66$; Cronbach’s $\alpha = .87$).

Turnover intentions. A four-item measure developed by McFarlane-Shore and Martin (1989) was used to measure participants’ intentions to leave their current job. This measure contains items such as “Which of the following statements most clearly reflects your feelings about your future with this organization in the next year?” Responses for this item ranged from “I will

definitely not leave" = 1 to *"I will definitely leave"* = 5 ($M = 12.94$; $SD = 3.81$; Cronbach's $\alpha = .83$).

Control Variables

Employee age. While age is not necessarily related to employee burnout, some studies have found small to moderate correlations between the age of workers and job burnout (see meta-analysis by Brewer & Shapard, 2004). Therefore, age was included as a control variable in the data analysis.

Perceived life stress. Perceived life stress was assessed by using Cohen, Karmack, and Mermelstein's (1983) Global Measure of Perceived Stress. Participants were asked to indicate (on a five-point scale ranging from "never" to "very often") how often they thought of or reacted to daily stressful events, with higher scores indicating greater frequency of perceived stress. Items included questions such as "In the last month, how often have you felt confident about your ability to handle your personal problems?" ($M = 27.60$; $SD = 5.85$; Cronbach's $\alpha = .88$).

Perceptions of communication technology usefulness for work-related purposes. Perceived usefulness of communication technology for work-related purposes was also used as a control variable when testing H3a, H3b, and H4. See description of this measure above.

Results

The survey data were entered into SPSS 21 for statistical analysis, and the researchers used regression analysis to examine relationships among the study variables. The correlation matrix for each of the study variables appears in Table 1.

H1 stated that as the amount of time using communication technologies for work-related tasks outside of regular work hours increases, work life conflict associated with communication technology use will increase. A single regression analysis revealed that increased amount of time using communication technologies for work-related tasks outside of regular work hours was predictive of increased work life conflict associated with communication technology use, $F(1, 156) = 40.63$, $p < .001$, $\beta = .48$, $t = 6.375$, $p < .001$, adjusted $R^2 = .23$, supporting H1.

H2 predicted that increases in perceptions of the usefulness of communication technologies for work-related tasks after regular work hours would be predictive of decreases in perceptions of work life conflict associated with

Table 1. Correlation Matrix for All Variables.

	1	2	3	4	5	6	7	8
1. Regular work hours	—	.28**	.21*	.01	.11	.03	.01	.11
2. Outside work hours		—	.48**	.10	.02	.04	.02	.55**
3. Work life conflict			—	.42**	.45**	-.28	.11	-.59**
4. Perceived stress				—	.67**	-.44*	.18*	-.12
5. Job burnout					—	-.73**	.31**	.07
6. Job satisfaction						—	-.46**	.01
7. Turnover intentions							—	-.04
8. Perceived usefulness								—

* $p < .05$, ** $p < .01$, and *** $p < .001$.

communication technology use. A single regression analysis indicated that as negative perceptions of the usefulness of communication technologies for work-related tasks increased, perceptions of work life conflict associated with communication technology use increased, $F(1, 156) = 82.49$, $p < .001$, $\beta = -.59$, $t = -9.082$, $p < .001$, adjusted $R^2 = .35$, supporting H2.

H3a stated that when controlling for age, perceived life stress, and perceived usefulness of technology, increases in work life conflict associated with communication technology use would be predictive of increases in job burnout. Similarly, H3b asserted that when controlling for age, perceived stress, and perceived usefulness of technology, increases in work life conflict associated with communication technology use would be predictive of increased turnover intentions. A regression model was constructed to test these hypotheses. Respondents' age, perceived life stress scores, and perceived usefulness of technology scores were entered in the first block of the model as control variables. Communication technology-related work life conflict was entered in the second block of the model. Perceived job burnout and turnover intentions served as the outcome variables.

The results of the model support H3a (see Table 2). The control variables explained 42% of the variance. After accounting for the variance explained by the control variables, increase in work life conflict associated with communication technology use was a significant predictor of job burnout, $\beta = .33$, $t = 3.619$, $p < .001$. Adding work life conflict associated with communication technology use in the second block of the model explained an additional 5% of the variance in job burnout, and the final model was significant, $F(4, 131) = 30.81$, $p < .001$. However, the results of the model did not support H3b (see Table 3). The control variables explained 4% of the variance. After accounting for the

Table 2. Work Life Conflict as Predictor of Job Burnout and Turnover Intentions.

	Outcome variables					
	Burnout			Turnover intentions		
	β	t	ΔR^2	β	t	ΔR^2
Block 1: Control variables			.42**			.04**
Age	.01	0.17		.18*	2.111	
Perceived stress	.52**	7.220		.17	1.803	
Perceived usefulness	-.17*	2.100		.13	1.194	
Block 2: Work life conflict			.47**			.05 n.s.
Work life conflict	.33**	3.619		.17	1.41	

Note. Model summaries: job burnout, $F(4, 131) = 30.81, p < .001$; turnover intentions, $F(4, 135) = 2.75, p < .05$. n.s. = not significant

* $p < .05$, ** $p < .01$, and *** $p < .001$.

Table 3. Work Life Conflict as a Predictor of Job Satisfaction.

	Job Satisfaction		
	β	t	ΔR^2
Block 1: Control variables			.17*
Age	.12	1.572	
Perceived stress	.37**	4.214	
Perceived usefulness	.16	1.638	
Block 2: Work life conflict			.19*
Work life conflict	-.23*	-2.094	

Note. Model summary: job satisfaction, $F(4, 136) = 9.012, p < .001$.

* $p < .05$, ** $p < .01$, and *** $p < .001$.

variance explained by the control variables, work life conflict associated with communication technology use was not a significant predictor of turnover intentions, $\beta = .17, t = 1.41, p > .05$. Adding work life conflict associated with communication technology use to the second block of the model did not significantly increase the variance in predicting intentions to leave the organization. The final model was significant, $F(3, 135) = 2.749, p < .05$.

H4 stated that when controlling for age, perceived stress, and perceived usefulness of technology, increases in perceived work life conflict will be predictive of decreased job satisfaction. Respondents' age, perceived stress scores, and perceived usefulness of technology scores were entered in the

first block of the model as control variables. Communication technology-related work life conflict was entered in the second block of the model. Job satisfaction scores served as the outcome variable.

The results of the model support H4 (see Table 3). The control variables explained 17% of the variance. After accounting for the variance explained by the control variables, increased work life conflict associated with communication technology use was a significant predictor of decreased job satisfaction, $\beta = -.23$, $t = -2.094$, $p < .05$. Adding work life conflict associated with communication technology use in the second block of the model explained an additional 2.6% of the variance. The final model was significant, $F(4, 136) = 9.012$, $p < .001$.

Discussion

The purpose of this study was to investigate employee perceptions of the influence of communication technology use outside of traditional work hours on perceptions of work life conflict, burnout, turnover intentions, and job satisfaction. The study findings shed light on theory and research in this area in several ways.

The results of the survey indicated that as the number of outside of work hours increased via use of communication technologies, this was related to significantly increased perceptions of work life conflict. This extends previous theory and research in this area by demonstrating that work conducted via communication technologies outside of normal working hours may contribute to perceptions of work life imbalance. As with other work duties that are carried over into home life, communication technologies (despite their convenience) may blur the boundaries between work and home. While this finding is consistent with what previous researchers have suggested (Boswell & Olson-Buchanan, 2007; Jarvenpaa & Lang, 2005; Peeters et al., 2005), it adds to this literature by providing empirical support for these claims and providing some justification for the inclusion of technology use after regular work hours in future theoretical models of work life conflict. Future researchers should also consider exploring differences in perceptions of intrusion (work life conflict) based on the types of communication devices used by workers. For example, mobile smartphones allow workers to be reached anywhere, whereas employees typically do not carry around laptop computers (Jarvenpaa & Lang, 2005; Mazmanian et al., 2013), and it would be interesting to explore the extent to which different communication devices contribute to work life conflict in future studies.

Moreover, the current study found that individuals who had positive perceptions of the usefulness of communication technologies for work-related

purposes after regular work hours were more likely to experience a decreased sense of work life conflict. In other words, they may perceive communication technology as a convenient means of connecting with work, while in the home environment or outside of work life. While this finding is consistent with previous research that found some workers who frequently use technology to connect with work experience decreased work life conflict (Chow & Keng-Howe, 2006; Edley, 2001; Gajendran & Harrison, 2007), these studies did not assess technology use above and beyond regular work hours, and the current findings extend this research by making the case for the need to assess perceptions of the usefulness of communication technology for work conducted after regular when examining overall work life conflict among employees.

It appears that organizations and managers should not only consider how often employees are working outside of regular work hours but also their perceptions of the usefulness of these technologies (which may also be an important moderating variable to include in theoretical models and future studies). Based on these findings, future researchers should consider examining differences in employee boundary management preferences and their relationship to perceived usefulness of communication technologies after regular work hours. For example, some individuals prefer to integrate work and home domains, whereas others prefer a clear separation between work and home life. It is likely that people who have more permeable work life boundaries may perceive work-related communication technology use more favorably, whereas workers who prefer a more rigid separation between the two domains see communication technology as more of an intrusion into their private lives. Future theoretical work should consider integrating employee boundary management preferences into models that assess the relationship between technology-related work life conflict and organizational outcomes.

The study also extended previous work by investigating the relationships between communication technology-related work life conflict and job burnout, turnover intentions, and job satisfaction. The results indicated that when controlling for worker age, life stress, and perceived usefulness of technology for work-related tasks, increased work life conflict (related to new communication technology use) was associated with increased job burnout, but not increases in turnover intentions. In addition, decreases in work life conflict associated with communication technology use were predictive of increased job satisfaction. While previous studies have linked work life conflict to each of these outcomes (see Fonner & Roloff, 2010; Geurts et al., 2003; Janssen et al., 2004), the current study findings extend theory in this area by demonstrating that work life conflict associated with

communication technology use after hours may be a unique contributor to job burnout and job satisfaction. In short, scholars developing future theoretical models of work life conflict should consider accounting for the degree to which communication technology use after regular work hours contributes to work life imbalance and important organizational outcomes such as job burnout and satisfaction.

In addition, it was interesting that although overall life stress (as a control variable) was a significant predictor of both employee job burnout and turnover intentions, increases in work life conflict associated with technology use after regular work hours did not significantly predict turnover intentions (beyond the variance explained by overall life stress). This finding might be partially explained by social desirability bias. The participants may have been concerned that their supervisors might learn of their turnover intentions (at some level), and this may have kept the respondents from responding honestly to this measure. Another explanation may be that workers expect some degree of work-related technology interference in their private lives as a normal part of their job (due to the growing pervasiveness of connecting with work via technology after hours). If the degree of interference of these technologies is within an employee's expectations (as opposed to being perceived as excessive interference), then such intrusions may be tolerated in a way that could increase burnout, but not necessarily provide the motivation to seek employment elsewhere. Hence, it may be useful to assess expectancy violations regarding work-related technology use outside of regular work hours in addition to parceling out stress and perceived usefulness of communication technologies when developing theoretical models of the relationship between work life conflict and organizational outcomes, such as burnout, turnover intentions, and job satisfaction.

In terms of pragmatic suggestions, managers and organizations may benefit from developing clear policies that help employees maintain a healthier balance between work and private life roles (e.g., policies regarding email correspondence during nights and weekends) or by developing informal guidelines that discourage work-related communication technology use outside of traditional work hours. For example, Hylmö (2006) called for additional research focused on how organizations legitimize working from home and various work-related tasks that are performed via new technologies from home. Kelly et al. (2011) suggested that in careers or organizations where employees experience high levels of work life conflict, managers can negotiate flexible work arrangements, adjust schedules.

In addition, managers can also facilitate supportive relationships for employees, including mentoring relationships and ongoing support groups within the organization. Kossek et al. (2010) contended that social support

operates at two interactive levels within the workplace: (a) relational support from managers or coworkers and (b) at the organizational level where resources and overarching cultural values and norms are created. Support at both levels may help employees to better cope with stress related to work life conflict. For example, Leonardi et al. (2010) suggested that companies develop training programs to prepare workers for the potential work distractions that they may experience in their free time, or support a forum for employees to share helpful suggestions for coping with these types of work-related interruptions during their free time.

Furthermore, the current study findings are consistent with Kossek and Lautsch's (2008) notion that employees have specific preferences for segmenting or integrating work and life roles. These authors suggest that managers should identify the preferred ways in which employees cope with work life conflict in an effort to tailor organizational expectations and policies regarding technology-facilitated work (particularly outside of regular work hours) toward these preferences. Future research would benefit from examining the degree to which such tailored policies affect outcomes such as satisfaction, stress, and burnout.

Future research that informs organizations about ways to develop clearer policies related to work life conflict and communication technology use may help reduce role ambiguity and the stress/dissatisfaction that often stems from it. According to Leonardi et al. (2010), managers should start a dialogue with employees to identify what types of technology-related messages and modalities they find distracting or disturbing and consider how to create a more productive work environment. Moreover, future researchers should consider the impact of communication technology use outside of traditional work hours on the employee's family members and extended social network, particularly the ways in which work-related stress resulting from work-related technology use at home affects workers' relationships as well as how social support from one's social network may buffer this type of stress.

Finally, some employee's stress and burnout levels might be affected by their own dependency on communication technologies (e.g., those employees who feel the need to continually "check in" with work). In this sense, it is not so much that supervisors or other sources from the workplace are intruding on one's personal life. Rather, some employees may have difficulty curbing their tendency to continually check in with work (due to technological dependency or addiction), and this may lead to "self-inflicted" work life conflict (see Mazmanian et al., 2013). This is an issue that would be interesting to examine in future studies.

Limitations

In addition to the findings, the limitations of this study warrant consideration. These include a potential selection bias due to the voluntary nature of the online survey and the fact that the organizations in the sample were all located in a single Midwestern city, both of which may limit the generalizability of the study findings. Most notably, the use of a nonprobability “snowball” sample likely influenced the disproportionate number of female respondents in the sample. Given that the majority of the sample consisted of female workers, the study findings should be interpreted cautiously, and future researchers should strive for a more balanced number of male and female workers when attempting to replicate or extend these findings. Moreover, the cross-sectional nature of the study did not allow us to examine the impact of communication technology use on work life conflict and related outcomes over time. In addition, the use of behavioral intention to leave the organization may have been problematic. Participants in the survey may have been concerned over whether or not responses could be tracked (via Internet protocol [IP] addresses), and they may have feared providing an honest answer regarding their turnover intentions (see Wright, 2005).

Conclusion

Communication technologies will continue to evolve and will be used by workers to connect with the workplace in the future. While for some workers, these technologies may be perceived as beneficial in terms of promoting flexibility with accomplishing work-related tasks, for other workers they may be seen as another means by which work interferes with free time. Depending upon how these technologies are perceived, this may influence organizational outcomes, such as burnout, job satisfaction, and turnover intentions. While the current study attempted to further our understanding of work-related technology use on these outcomes, more research is needed to assess the many ways communication technologies may harm or enhance the balance between work life and private life, including how these technologies affect broader relationships with workers’ friends and family members.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association*, 288, 1987-1993. doi:10.1001/jama.288.16.1987
- Apker, J., & Ray, E. B. (2003). Stress and social support in health care organizations. In T. L. Thompson, A. M. Dorsey, K. I. Miller, & R. Parrott (Eds.), *Handbook of health communication* (pp. 347-368). Mahwah, NJ: Lawrence Erlbaum.
- Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35, 831-858.
- Bagger, J., & Li, A. (2012). Being important matters: The impact of work and family centralities on the family-to-work conflict-satisfaction relationship. *Human Relations*, 65, 473-500. doi:10.1177/0018726711430557
- Beam, R., Kim, E., & Voakes, P. (2003). Technology-induced stressors, job satisfaction and workplace exhaustion among journalism and mass communication faculty. *Journalism & Mass Communication Educator*, 57, 335-351.
- Boswell, W. R., & Olson-Buchanan, J. B. (2007). The use of communication technologies after hours: The role of work attitudes and work-life conflict. *Journal of Management*, 33, 592-610. doi:10.1177/0149206307302552
- Boyd, N. G., Lewin, J. E., & Sager, J. K. (2009). A model of stress and coping and their influence on individual and organizational outcomes. *Journal of Vocational Behavior*, 75, 197-211. doi:10.1016/j.jvb.2009.03.010
- Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of Applied Psychology*, 35, 307-311.
- Brewer, E. W., & Shapard, L. (2004). Employee burnout: A meta-analysis of the relationship between age or years of experience. *Human Resource Development Review*, 3, 102-123.
- Burke, R. J., & Greenglass, E. R. (1999). Work-life congruence and work-life concerns among nursing staff. *Canadian Journal of Nursing Leadership*, 12, 21-29.
- Buunk, B. P., Schaufeli, W. B., & Ybema, J. F. (1994). Burnout, uncertainty, and desire for social comparison among nurses. *Journal of Applied Social Psychology*, 24, 1701-1718. doi:10.1111/j.1559-1816.1994.tb01570.x
- Chow, I. H., & Keng-Howe, I. C. (2006). The effect of alternative work schedules on employee performance. *International Journal of Employment Studies*, 14, 105-130.
- Cohen, S., Karmack, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Cowan, R. L., & Hoffman, M. F. (2007). The flexible organization: How contemporary employees construct the work/life border. *Qualitative Research Reports in Communication*, 8, 37-44. doi:10.1080/17459430701617895

- Davis, J. D. (2010). *The modern, mobile me: An exploration of smartphones, being always on, and our relations with work in the United States* (Doctoral dissertation). University of Texas, Austin. Retrieved from <http://hdl.handle.net/2152/ETD-UT-2010-05-760>
- Edley, P. P. (2001). Technology, employed mothers, and corporate colonization of the lifeworld: A gendered paradox of work and family balance. *Women & Language, 24*, 28-35.
- Ellis, B. H., & Miller, K. I. (1994). Supportive communication among nurses: Effects on commitment, burnout, and retention. *Health Communication, 6*, 77-96. doi:10.1207/s15327027hc0602_1
- Fenner, G. H., & Renn, R. W. (2010). Technology-assisted supplemental work and work-to-family conflict: The role of instrumentality beliefs, organizational expectations and time management. *Human Relations, 63*, 63-82.
- Fonner, K. L., & Roloff, M. E. (2010). Why teleworkers are more satisfied with their jobs than are office-based workers: When less contact is beneficial. *Journal of Applied Communication Research, 38*, 336-361. doi:10.1080/00909882.2010.513998
- Fonner, K. L., & Roloff, M. E. (2012). Testing the connectivity paradox: Linking teleworkers' communication media use to social presence, stress from interruptions, and organizational identification. *Communication Monographs, 79*, 205-231. doi:10.1080/03637751.2012.673000
- Frone, M. R. (2000). Work-family conflict and employee psychiatric disorders: The National Comorbidity Survey. *Journal of Applied Psychology, 85*, 888-895. doi:10.1037/0021-9010.85.6.888
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Prevalence of work-family conflict: Are work and family boundaries asymmetrically permeable? *Journal of Organizational Behavior, 13*, 723-729.
- Frone, M. R., Russell, M., & Cooper, M. L. (1997). Relation of work-family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology, 70*, 325-335.
- Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology, 92*, 1524-1541. doi:10.1037/0021-9010.92.6.1524
- Geurts, S. A. E., Kompier, M. A. J., Roxburgh, S., & Houtman, I. L. D. (2003). Does work-home interference mediate the relationship between workload and well-being? *Journal of Vocational Behavior, 63*, 532-559. doi:10.1016/S0001-8791(02)00025-8
- Golden, A. G., & Geisler, C. (2007). Work-life boundary management and the personal digital assistant. *Human Relations, 60*, 519-551. doi:10.1177/0018726707076698
- Hayman, J. (2005). Psychometric assessment of an instrument designed to measure work life balance. *Research and Practice in Human Resource Management, 13*, 85-91.
- Hoffman, M. F., & Cowan, R. L. (2008). The meaning of work/life: A corporate ideology of work/life balance. *Communication Quarterly, 56*, 227-246. doi:10.1080/01463370802251053

- Hylmö, A. (2006). Telecommuting and the contestability of choice: Employee strategies to legitimize personal decisions to work in a preferred location. *Management Communication Quarterly*, 19, 541-569. doi:10.1177/0893318905284762
- Janssen, P. P. M., Peeters, M. C. W., de Jonge, J., Houkes, I., & Tummers, G. E. R. (2004). Specific relationships between job demands, job resources and outcomes and the mediating role of work home interference: A cross cultural validation study among nurses. *Journal of Vocational Behavior*, 65, 411-429.
- Jarvenpaa, S. L., & Lang, K. R. (2005). Managing the paradoxes of mobile technology. *Information Systems Management*, 27, 7-22.
- Kelly, E., Moen, P., & Tranby, E. (2011). Changing workplaces to reduce work-family conflict: Schedule control in a white-collar organization. *American Sociological Review*, 76, 265-290.
- Kim, H., & Stoner, M. (2008). Burnout and turnover intention among social workers: Effects of role stress, job autonomy, and social support. *Administration in Social Work*, 32, 5-25. doi:10.1080/03643100801922357
- Kirby, E. L., Golden, A. G., Medved, C. E., Jorgenson, J., & Buzzanell, P. M. (2003). An organizational communication challenge to the discourse of work and family research: From problematics to empowerment. In P. J. Kalbfleisch (Ed.), *Communication yearbook 27* (pp. 1-43). Mahwah, NJ: Lawrence Erlbaum.
- Kirby, E. L., Wieland, S. M., & McBride, M. C. (2006). Work/life conflict. In J. G. Oetzel & S. Ting-Toomey (Eds.), *The SAGE handbook of conflict communication: Integrating theory, research, and practice* (pp. 327-357). Thousand Oaks, CA: Sage.
- Kirby, E. L., Wieland, S. M., & McBride, M. C. (2012). Work-life conflict. In J. G. Oetzel & S. Ting-Toomey (Eds.), *The SAGE handbook of conflict communication: Integrating theory, research, and practice* (2nd ed., pp. 377-402). Thousand Oaks, CA: Sage.
- Kossek, E. E., & Lautsch, B. A. (2008). *CEO of me: Creating a life that works in the flexible job age*. Philadelphia, PA: Pearson.
- Kossek, E. E., & Lautsch, B. A. (2012). Work-family boundary management styles in organizations: A cross-level model. *Organizational Psychology Review*, 2, 152-171.
- Kossek, E. E., Lewis, S., & Hammer, L. B. (2010). Work-life initiatives and organizational change: Overcoming mixed messages to move from the margins to the mainstream. *Human Relations*, 63, 3-19.
- Kossek, E. E., & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behavior-human resources research. *Journal of Applied Psychology*, 83, 139-149. doi:10.1037/0021-9010.83.2.139
- Kreiner, G. E., Hollensbe, E., & Sheep, M. L. (2009). Balancing borders and bridges: Negotiating the work-home interface via boundary work tactics. *Academy of Management Journal*, 52, 704-730.
- Leonardi, P. M., Treem, J. W., & Jackson, M. H. (2010). The connectivity paradox: Using technology to both decrease and increase perceptions of distance in

- distributed work arrangements. *Journal of Applied Communication Research*, 38, 85-105.
- Martins, L. L., Eddleston, K. A., & Veiga, J. F. (2002). Moderators of the relationship between work-family conflict and career satisfaction. *Academy of Management Journal*, 45, 399-409. doi:10.2307/3069354
- Maslach, C. (1982). *Burnout: The cost of caring*. Englewood Cliffs, NJ: Prentice Hall.
- Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, 5, 189-192. doi:10.1111/1467-8721.01258
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual* (3rd ed.). Mountain View, CA: CPP.
- Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professional. *Organizational Science*, 24, 1337-1357. Retrieved from <http://dx.doi.org/10.1287/orsc.1120.0806>
- McFarlane-Shore, L., & Martin, H. J. (1989). Job satisfaction and organizational commitment in relation to work performance and turnover intentions. *Human Relations*, 42, 625-638.
- McManus, I. C., Winder, B. C., & Gordon, D. (2002). The causal links between stress and burnout in a longitudinal study of UK doctors. *Lancet*, 359, 2089-2090. doi:10.1016/S0140-6736(02)08915-8
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of Work-Family Conflict and Family-Work Conflict Scales. *Journal of Applied Psychology*, 81, 400-410.
- Peeters, M. C. W., Montgomery, A. J., Bakker, A. B., & Schaufeli, W. B. (2005). Balancing work and home: How job and home demands are related to burnout. *International Journal of Stress Management*, 12, 43-61. doi:10.1037/1072-5245.12.1.43
- Perlow, L. A. (1998). Boundary control: The social ordering of work and family time in a high-tech corporation. *Administrative Science Quarterly*, 43, 328-357.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London, England: Taylor & Francis.
- Shia, S. M., & Monroe, R. W. (2006). Telecommuting's past and future: A literature review and research agenda. *Business Process Management Journal*, 12, 455-482.
- Shumate, M., & Fulk, J. (2004). Boundaries and role conflict when work and family are colocated: A communication network and symbolic interaction approach. *Human Relations*, 57, 55-74. doi:10.1177/0018726704042714
- Stephens, K. K., Cho, J. K., & Ballard, D. I. (2012). Simultaneity, sequentiality, and speed: Organizational messages about multiple-task completion. *Human Communication Research*, 38, 23-47.
- Valcour, P. M., & Hunter, L. W. (2005). Technology, organizations, and work-life integration. In E. E. Kossek & S. J. Lambert (Eds.), *Work and life integration: Organizational, cultural, and individual perspectives* (pp. 61-84). Mahwah, NJ: Lawrence Erlbaum.
- Wright, K. B. (2005). Researching internet-based populations: Advantages and disadvantages of on-line survey research, on-line questionnaire authoring

software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3), Article 11. doi:10.1111/j.1083-6101.2005.tb00259.x

Author Biographies

Kevin B. Wright, PhD, is a Professor in the Department of Communication at George Mason University.

Bryan Abendschein, MA, is a doctoral student in the Department of Communication at the University of Illinois Urbana-Champaign.

Kevin Wombacher, MA, is a doctoral student in the Department of Communication at the University of Kentucky.

Michaela O'Connor, MA, is a graduate student in the Department of Communication at Saint Louis University.

Megan Hoffman, MA, is a graduate student in the Department of Communication at Saint Louis University.

Molly Dempsey, MA, is a graduate student in the Department of Communication at Saint Louis University.

Christopher Krull, MA, is a graduate student in the Department of Communication at Saint Louis University.

Audrey Dewes, MA, is a graduate student in the Department of Communication at Saint Louis University.

Audresy Shelton, MA, is a graduate student in the Department of Communication at Saint Louis University.