Remote e-Work and Distance Learning for Academic Medicine: Best Practices and Opportunities for the Future

Shuhan He, MD (@ShuhanHeMD)
Debbie Lai, BA
Sarah Mott, MD (@mottse)
Andrew Little, DO (@andyglittle)
Andrew Grock, MD (@andygrock)
Mary R. C. Haas, MD (@maryhaasmd)
Teresa M. Chan, MD, MHPE (@TChanMD)

The COVID-19 pandemic has created a powerful impetus to move entire organizations toward remote e-work. However, even prior to the pandemic, remote e-work had already emerged as common practice outside of academic medicine, with 70% of individuals globally working remotely 1 day of the week and 53% working remotely for more than half of the week.[1] National US data from 2018 previously showed that roughly one-fifth of all students were taking at least 1 class online.[2] Despite the increasingly common integration of remote e-work practices in other industries, academic medicine has yet to fully utilize advancements in information and education technology.[3]

Although several terms are currently used to describe this concept, we have chosen the term "remote e-work" in this article to refer broadly to work completed digitally outside of the traditional office, whether from home or another location. Several other related terms include telecommuting, telework, mobile work (or M work), working from home, remote work, working remotely, and alternative workplaces.[4–7] While subtle differences between these terms exist, a detailed review of these nuances is beyond the scope of this article. We acknowledge that remote e-work can occur in varying degrees, such as for some or all team members, for part or all of the work week, and for limited periods of time or permanently.

The Academic Life in Emergency Medicine (ALiEM) organization has engaged in high-level remote e-work for more than a decade. The authors of this article include members of this team of virtually based clinician educators who collaborate and accomplish tasks primarily via remote e-work mechanisms. Drawing from our experience, we share applications of remote e-work for academic physicians, including a consensus-based list of advantages and disadvantages. We hope our insights help others working in graduate medical education (GME) to explore remote e-work, both during shelter-in-place periods and as we look beyond to the post-COVID-19 era.

DOI: http://dx.doi.org/10.4300/JGME-D-20-00242.1

Editor's Note: The online version of this article contains a list of the advantages and disadvantages of remote work.

Background

The dawn of information technology (IT) and the internet challenged workplace norms, including the wholesale dependency on physical offices and in-person interactions. Remote e-work has become commonplace in many sectors; particularly in the IT industry, where IBM (which piloted remote e-work in 1979) has reported that 40% of its workforce (nearly 154,000 employees) now have no office space at all.[8] Today, a simple Google Scholar search yields innumerable articles and studies trumpeting the advantages of remote e-work.[9,10] The professional services industry has the highest overall percentage of those who work remotely (17%), followed by health care (12%), finances and insurance (10%), manufacturing (8.5%), and educational services (7.5%).[11]

Why, then, is this not the case with academic medicine? Medical schools still cling to the lecture or in-person small group experiences as their main methods for educational programming. Recently, due to the COVID-19 pandemic, many national graduate and postgraduate organizations, perhaps due to a lack of familiarity or faith in new technologies, have taken drastic measures affecting training. For instance, the decision to cancel or reschedule end-of-training and qualifying board certification examinations in the United States[12] and Canada[13] will result in a paucity of new board-certified specialist physicians and surgeons across the country, with thousands unable to become fully licensed. This pandemic has highlighted some of the key vulnerabilities that health care organizations face in their overreliance on in-person events and processes.

TABLE 1
Technological Advancement Opportunities in Academic Medicine

Opportunities	Potential Benefits
Improving project collaboration	▪ Enhances collaboration and quality of work ▪ Improves efficiency ▪ Most cloud-based platforms can automatically save and sync changes to improve efficiency while allowing users to easily revert to old versions
Creating virtual meetings	▪ Facilitates scheduling of essential meetings due to improved flexibility ▪ Reduces impromptu and nonproductive side conversations and distractions
Fostering digital mentorship	▪ Removes geographic barriers to mentor-mentee relationships ▪ Enhances mentor-mentee communication due to availability of multiple platforms (eg, chat, text, e-mail) ▪ Builds personal rapport and increases engagement of both parties through more casual, convenient, and frequent interactions
Forming virtual communities of practice	▪ Promotes social learning among individuals who share a particular interest despite geographic distances ▪ Increases cognitive diversity, which can enhance team performance ▪ Allows the most relevant experts around the world to collaborate on a given task ▪ Builds powerful colleague networks that may catalyze new links between people with complementary and synergistic expertise, thereby enhancing project quality
Advancing online learning	Synchronous: ▪ Increases student access to a broader range of resources Asynchronous: ▪ Allows students to access content anywhere, anytime ▪ Archives content such that students can easily access for future and repeated use and review ▪ Facilitates peer learning through increased ease and convenience ▪ Creates opportunities for asynchronous case discussions and other forms of remote learning

Potential Applications of Remote e-Work in Academic Medicine

From our perspective, there are 5 areas (summarized in TABLE 1) where academic medicine can benefit the most from applying new technologies to enable and enhance remote e-work. These include: (1) improving project collaboration; (2) creating virtual meetings; (3) fostering digital mentorship; (4) forming virtual communities of practice; and (5) advancing online learning.

Improving Project Collaboration

Cloud computing involves the use of online storage and bandwidth on a pay-for-what-you-use basis.[14] Many large institutions offer free cloud storage for trainees, faculty, and employees. These platforms allow for multiple editors based in various locations to concurrently edit documents saved in the cloud.

Creating Virtual Meetings

Conducting meetings virtually can facilitate scheduling and negate the need to commute and travel between sites. As an example, a program's core faculty or clinical competency committee may elect to meet virtually.

Fostering Digital Mentorship

Despite numerous established benefits of mentorship in academic medicine (research productivity, grant success), studies demonstrate many in the academic world still lack mentors.[15–17] Remote technology allows us to facilitate more potential mentorship connections. Mentors and mentees sharing professional and personal interests can connect without limitations often imposed by geographic location.[18] Similarly, senior trainees may also find these platforms useful in their own peer mentorship or studying, without teachers present.[19]

Forming Virtual Communities of Practice

A community of practice (CoP), a term originally coined by Lave and Wenger[20,21] and modernized by Bourhis et al,[22–24] can be a powerful tool for developing academicians. Remote e-work can allow for the development of online CoPs that promote social learning among teams of individuals who share a particular interest. Removing geographic barriers

through technology also allows the most relevant experts around the world to collaborate on a given task.[25,26] The ALiEM Faculty Incubator, which annually invites approximately 30 early-to-mid-career scholars (with individuals from diverse locations such as Australia, India, Chile, Canada, and the United States) to engage in online faculty development is one example of a successful and efficient CoP.[27]

Advancing Online Learning

Learners everywhere have access to the courses of their choice, from any location and at any time, transcending geographic and scheduling barriers, and increasing reach and accessibility.[3,27,28] Content is saved as a permanent file that is easily accessible for future use and review. Learners can review content at their own pace, including rewatching portions of a lecture that were difficult to understand. Although this has not been well-established in the GME learner population, asynchronous reviewing of content has been shown to improve retention of knowledge on tests in some learner groups.[29–31] The same approach might be applied to small group teaching, which can similarly be recorded and viewed by trainees who were not present and rewatched by trainees who were present.

Similarly, online peer learning likewise transcends geographic barriers and eliminates commutes and associated expenditures. Finally, GME learners and teachers can leverage asynchronous communication tools to discuss complex topics as they are encountered[32,33]; increased ease and convenience may also augment the willingness and frequency with which peers utilize each other for learning. Examples of new methods to deliver asynchronous content include the ALiEM Chief Resident Incubator program[28] and the CanadiEM Digital Scholars program.[34]

Dedicated research of digital learning environments and how they might be effectively harnessed more in GME are certainly warranted.[35] While there is an obvious opportunity for innovations in point-of-care resources that allow for just-in-time learning at the bedside,[36] these same resources might allow for asynchronous review. Videos featuring standardized patients, previously recorded simulations, or simple written fictionalized cases could all be augmented by asynchronous discussion similar to our ALiEM Medical Education in Cases Series.[33]

Best Practices

Remote e-work enables a number of new opportunities and applications for academic medicine. Moving away from traditional, hierarchical team structures benefits both individuals and the larger group. Non-hierarchical teaming can foster psychological safety, which in turn may have significant positive effects on the work environment. For instance, prior studies of health care teams have demonstrated that those lower in the hierarchy perceive themselves to have less knowledge relative to those higher up, and are thus less likely to share their opinions.[37,38] Junior members of non-hierarchical teams may suggest ideas and provide honest, constructive feedback related to the team's dynamics, processes, and products more readily in a remote setting.

At the same time, movement away from primarily in-person interactions has generated new challenges that leaders and individual members must navigate to build a successful and productive team culture. The online supplemental material lists some potential benefits and downsides of introducing remote e-work compared to the more traditional in-person methods.

Bearing in mind the advantages and disadvantages with remote learning (as listed in the online supplemental material), we want to emphasize that remote e-work may not look the same for all teams, nor should it. Teams are unique. Based on our selected review of the literature both within and outside of academic medicine, we developed some best practice concepts that are important to consider when implementing (or improving) a remote working environment. TABLE 2 details some of these best practices.

Virtual platforms can fundamentally change the nature of communication, collaboration, and teaming. Institutions and companies utilize remote e-work to varying degrees. These 3 types of groups include: *remote-friendly*, *remote-first*, and *remote-only*.

Remote-friendly organizations allow *certain* employees to work remotely at *certain* times, *all* employees to work remotely at *certain* times, or *certain* employees to work remotely *all* the time, etc.[50] Others are *remote-first*, whereby the bulk of the team works remotely, but some do not. Github (an IT company that allows groups to host and review computer code, acquired by Microsoft in 2018) takes a *remote-first* approach, where employees are encouraged to work wherever they are happiest, so long as they can get their work done. Github now has a portion of its 1000 employees working from some 15 countries.[51] Finally, *remote-only* organizations[46] have no physical office at all, such as Automattic (parent company of Wordpress), which has 1176 employees in 76 countries.[52] Readers should consider to what extent a team, course, or organization is to be remote, and for whom and in what cases it is appropriate to support remote e-work.

The best practices highlighted in TABLE 2 can facilitate the transition to remote e-work. Creating cultural norms, implementing proper onboarding processes, and providing clear standard operating procedures are all key to enabling a successful remote

TABLE 2
Best Practices and Tactics to Improve Remote e-Work Team Processes

Best Practices	Specific Tactics	Considerations
Invest in communication to combat challenges within your team or organization.	Trust can optimize remote e-work and online collaboration within a team.[39–41]	Integrating remote e-work can enhance communication among members, specifically regarding virtual communication. Team members and students can learn strategies to increase responsiveness to asynchronous communication and ways to maximize synchronous interactions. To maximize the team's efforts, members must intentionally invest time to familiarize themselves with each other and learn each person's work, learning, and communication style.
	Maintaining flexibility regarding the types and timing of communication is key to creating a successful team.	Each team member will bring different communication strengths and weaknesses that differ across channels. Someone who is charismatic in face-to-face interactions might come off as brusque in writing. Team leaders should invest in learning and practicing skills to ensure effective communication via technology, hold frequent team discussions, and provide opportunities for feedback on team dynamics.
	Nurture a positive culture in line with the team's values.	The team must employ creative methods for evoking a positive working culture. Members will be more likely to adopt clearly defined attitudes actively demonstrated by team leaders. Physical distance does not reduce the need for effective leadership.[42]
Account for an adjustment period to decrease barriers.	Expect and plan for an adjustment period as those new to remote e-work learn how to do it effectively.	Consider creating a playbook on team culture, norms, and practices. This playbook can facilitate the onboarding process for new members.[43,44]
	Leaders must recognize that effective remote e-work requires technical infrastructure, operational structure, and cultural norms.	Consider technical requirements (ie, cost of various communication platforms, requirements for higher bandwidth to prevent lags and disruptions). Communication protocols must be clearly defined, agreed on, and adhered. Leaders must focus on cultivating a positive workplace where clear and respectful communication is consistently practiced.
	Account for a period of adjustment to new technological tools.	The use of new equipment and software to record and upload lectures comes with inherent challenges and technical difficulties. In the beginning, recordings may be lower quality or fraught with glitches, or may fail entirely.
	Empower those more familiar with these technologies to engage in planning and transition.	Since senior leaders of organizations may lack comfort or experience with new technologies, they may wish to involve more technologically facile team members to assist with decision making in times of crisis.
Intentionally set boundaries to avoid issues with work-life balance.	Set expectations to avoid unintentionally crossing boundaries.	With the ability to communicate at any time, teams should come to a consensus around when the team will be active (accounting for different time zones) and how quickly to expect responses. In France, the "right to disconnect," confirmed by the Supreme Court in 2004, holds "the fact that [the employee] was not reachable on his cell phone outside working hours cannot be considered as misconduct."[44,45]

TABLE 2
Best Practices and Tactics to Improve Remote e-Work Team Processes (continued)

Best Practices	Specific Tactics	Considerations
Be adaptable to accommodate different starting points, learning curves, and preferences.	Recognize and support team members who may lack comfort with new technologies.	To address this challenge, leaders should identify members of the team who are less familiar with the platforms used and provide assistance and training in their use.
	Individuals may display different levels of buy-in when it comes to the use of various technological platforms.	Communication is key. Users often note that small misunderstandings can snowball into larger misunderstandings given the lack of in-person nonverbal cues.[46]
	Recognize instances when remote e-work simply is ill-suited for a particular task or individual.	Help your team understand the pros and cons of digital collaboration methods. Provide guidance and create standard operating procedures for different types of work (eg, what can be done via video conferencing and what requires an in-person meeting).
Leverage online interactions and video, incorporate in-person activities, and actively maintain social life outside of work.	Leverage video, chatting, and real-time collaborative platforms to provide quality interactive time.	Video, if not always essential, can lend a more social dimension to collaboration and lead to greater personal satisfaction.[47] Although there is often a perception that remote work leads to isolation, e-work can be very social.[48] Collaboration does not necessarily require in-person interactions. Many tasks can be accomplished through live messaging, co-editing cloud documents (eg, writing a study protocol together on a Google doc while chatting on the phone), and other text-based synchronous communication.
	Create real-time, live events when necessary (and possible).[a]	Using a remote platform does not preclude groups from ever meeting in person. Online platforms cannot completely replace in-person interactions, which can invigorate the group, inject energy, and encourage spur-of-the-moment brainstorming; provide an environment for social interaction with additional benefits (eg, the ability to read facial expressions, hear the tone of one's voice, etc); and offer an opportunity for fun and celebration.
	Encourage team members to get out into the world and socialize or network with others (when possible).[a]	Team members should take active steps to ensure they continue to engage in in-person social interactions necessary to stay happy and healthy. This may involve working in public places such as coffee shops or co-working spaces, scheduling social activities, taking part in group exercise, and actively engaging in one's community.
Employ new tools to aid in accountability.	Harness the power of project management, scheduling, and collaboration platforms (ie, Slack, Basecamp, Trello, Asana, Monday).	Novel organizational productivity tools can provide team leaders with an efficient way to manage staff, teammates, or employees. These platforms monitor outcomes and allow for simultaneous tracking of the progress of various projects.
	For distance education, consider use of learning management platforms.	Online education programs often use tools to facilitate classroom administration. Popular learning management systems include Blackboard, Canvas, Moodle (open source), Brightspace, Sakai, LinkedIn Learning, and Homegrown.[49] We already have begun to see the impact of this trend on major companies.

[a] Indicates items that may not be possible during mandated quarantine or social distancing protocols.

team. However, each team will require adaptation of such practices according to its unique needs. Certainly, remote e-work cannot replace face-to-face interaction for all tasks and all teams. For instance, tasks that require physical contact, such as certain medical procedures and demonstrations thereof, may require one's physical co-location.

Conclusions

Remote e-work comes in multiple forms, each with its own benefits and challenges. Outcomes depend substantially on the method of implementation of remote e-work. Spurred by the COVID-19 pandemic, academic medicine has rapidly and suddenly integrated remote e-work. However, the ultimate long-term success of remote e-work will require strategic and responsive adjustments. Faculty, staff, and students are learning quickly to change their prior workflows to accommodate this shift. As this represents a transition from our traditional norms and practices, we anticipate leaders will encounter challenges associated with implementation, followed by a significant increase in positive outcomes and satisfaction once all team members accept and adopt remote e-work practices. We have great hope that this transition will open up many exciting avenues and methods to enhance research, scholarship, and education within medicine.

References

1. International Workplace Group. The IWG Global Workplace Survey: Welcome to Generation Flex—the employee power shift. http://assets.regus.com/pdfs/iwg-workplace-survey/iwg-workplace-survey-2019.pdf. Accessed May 4, 2020.
2. National Center for Education Statistics. IPEDS Data Explorer, Spring 2019, Fall Enrollment component. https://bit.ly/2JeVgDP. Accessed May 4, 2020.
3. Prober CG, Khan S. Medical education reimagined: a call to action. *Acad Med*. 2013;88(10):1407–1410. doi:10.1097/ACM.0b013e3182a368bd.
4. Nilles JM. Telecommunications and organizational decentralization. *IEEE Trans Commun*. 1975;23(10):1142–1147. doi:10.1109/TCOM.1975.1092687.
5. Kurland NB, Bailey DE. When workers are here, there, and everywhere: a discussion of the advantages and challenges of telework. *USC Marshall Center for Effective Communications*. https://ceo.usc.edu/1998/11/14/when-workers-are-here-there-and-everywhere-a-discussion-of-the-advantages-and-challenges-of-telework. Accessed May 4, 2020.
6. Ferguson M, Carlson D, Boswell W, Whitten D, Butts MM, Kacmar KM. Tethered to work: a family systems approach linking mobile device use to turnover intentions. *J Appl Psychol*. 2016;101(4):520–534. doi:10.1037/apl0000075.
7. Fitzer MM. Managing from afar: performance and rewards in a telecommuting environment. *Compens Benefits Rev*. 1997;29:65–73. doi:10.1177/088636879702900110.
8. Useem J. When working from home doesn't work. *The Atlantic*. https://www.theatlantic.com/magazine/archive/2017/11/when-working-from-home-doesnt-work/540660. Accessed May 4, 2020.
9. Hickman A, Robinson J. Is working remotely effective? Gallup Research says yes. *Gallup Research*. https://www.gallup.com/workplace/283985/working-remotely-effective-gallup-research-says-yes.aspx. Accessed May 4, 2020.
10. Choudhury P, Larson BZ, Foroughi C. Is it time to let employees work from anywhere? *Harv Bus Rev*. https://hbr.org/2019/08/is-it-time-to-let-employees-work-from-anywhere. Accessed May 4, 2020.
11. Reynolds B. Here are the key findings in the the 2017 state of telecommuting report. *Flexjobs*. https://www.flexjobs.com/employer-blog/key-findings-2017-state-of-telecommuting-report. Accessed May 4, 2020.
12. American Board of Medical Specialties. ABMS Statement Regarding Continuing Certification During COVID-19. https://www.abms.org/news-events/abms-statement-regarding-continuing-certification-during-covid-19. Accessed May 4, 2020.
13. Royal College of Physicians and Surgeons of Canada. Impact on Royal College Exams. http://www.royalcollege.ca/rcsite/documents/about/update-coronavirus-e. Accessed May 4, 2020.
14. Langmead B, Nellore A. Cloud computing for genomic data analysis and collaboration. *Nat Rev Genet*. 2018;19(4):208–219. doi:10.1038/nrg.2017.113.
15. Straus SE, Chatur F, Taylor M. Issues in the mentor-mentee relationship in academic medicine: a qualitative study. *Acad Med*. 2009;84(1):135–139. doi:10.1097/ACM.0b013e31819301ab.
16. Sambunjak D, Straus SE, Marusic A. A systematic review of qualitative research on the meaning and characteristics of mentoring in academic medicine. *J Gen Intern Med*. 2010;25(1):72–78. doi:10.1007/s11606-009-1165-8.
17. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine. *JAMA*. 2006;296(9):1103–1115. doi:10.1001/jama.296.9.1103.
18. Gottlieb M, Fant A, King A, Messman A, Robinson D, Carmelli G, et al. One click away: digital mentorship in the modern era. *Cureus*. 2017;9(11):e1838. doi:10.7759/cureus.1838.
19. Chan T, Sennik S, Zaki A, Trotter B. Studying with the cloud: the use of online web-based resources to augment a traditional study group format. *CJEM*. 2015;17(2):192–195. doi:10.2310/8000.2014.141425.

20. Lave J, Wenger E. *Situated Learning: Legitimate Peripheral Participation*. 1st ed. Cambridge, UK: Cambridge University Press; 1991.
21. Li LC, Grimshaw JM, Nielsen C, Judd M, Coyte PC, Graham ID. Evolution of Wenger's concept of community of practice. *Implement Sci*. 2009;4(1):11. doi:10.1186/1748-5908-4-11.
22. Bourhis A, Dubé L, Jacob R. The Success of virtual communities of practice: the leadership factor. *J Knowl Manag*. 2005;3(1):23–34.
23. Dube L, Bourhis A, Jacob R. Towards a typology of virtual communities of practice. *Interdiscip J Inform Knowl Manag*. 2006;1(1):69–93. doi:10.1145/2441776.2441845.
24. Dubé L, Bourhis A, Jacob R. The impact of structuring characteristics on the launching of virtual communities of practice. *J Organ Chang Manag*. 2005;18(2):145–166. doi:10.1108/09534810510589570.
25. Gottlieb M, Chan TM, Sherbino J, Yarris L. Multiple wins: embracing technology to increase efficiency and maximize efforts. *AEM Educ Train*. 2017;1(3):185–190. doi:10.1002/aet2.10029.
26. Yarris LM, Chan TM, Gottlieb M, Juve AM. Finding your people in the digital age: virtual communities of practice to promote education scholarship. *J Grad Med Educ*. 2019;11(1):1–5. doi:10.4300/jgme-d-18-01093.1.
27. Chan TM, Gottlieb M, Sherbino J, Cooney R, Boysen-Osborn M, Swaminathan A, et al. The ALiEM faculty incubator: a novel online approach to faculty development in education scholarship. *Acad Med*. 2018;93(10):1497–1502. doi:10.1097/ACM.0000000000002309.
28. Gisondi MA, Chou A, Joshi N, Sheehy MK, Zaver F, Chan TM, et al. Curriculum design and implementation of the emergency medicine chief resident incubator. *Cureus*. 2018;10(2):e2223. doi:10.7759/cureus.2223.
29. Tallent-Runnels MK, Thomas JA, Lan WY, Cooper S, Ahern TC, Shaw SM, et al. Teaching courses online: a review of the research. *Rev Educ Res*. 2006;76(1):93–135. doi:10.3102/00346543076001093.
30. Ronchetti M. Using video lectures to make teaching more interactive. *Int J Emerg Technol Learn*. 2010;5(2):45–48. doi:10.3991/ijet.v5i2.1156.
31. Lien K, Chin A, Helman A, Chan TM. A randomized comparative trial of the knowledge retention and usage conditions in undergraduate medical students using podcasts and blog Posts. *Cureus*. 2018;10(1):1–12. doi:10.7759/cureus.2065.
32. Hill J, LaFollette R, Grosso R, Axelson D, Hart K, McDonough E. Using Slack to facilitate virtual small groups for individualized interactive instruction. *AEM Educ Train*. 2019;3(1):92–95. doi:10.1002/aet2.10201.
33. Chan TM, Thoma B, Lin M. Creating, curating, and sharing online faculty development resources. *Acad Med*. 2015;90(6):785–789. doi:10.1097/ACM.0000000000000692.
34. Ting DK, Thoma B, Luckett-Gatopoulos S, Thomas A, Syed S, Bravo M, et al. CanadiEM: accessing a virtual community of practice to create a Canadian national medical education institution. *AEM Educ Train*. 2019;3(1):86–91. doi:10.1002/aet2.10199.
35. Thoma B, Turnquist A, Zaver F, Hall AK, Chan TM. Communication, learning and assessment: exploring the dimensions of the digital learning environment. *Med Teach*. 2019;41(4):385–390. doi:10.1080/0142159X.2019.1567911.
36. Patocka C, Lin M, Voros J, Chan T. Point-of-care resource use in the emergency department: a developmental model. *AEM Educ Train*. 2018;2(3):221–228. doi:10.1002/aet2.10101.
37. Schwappach DL, Gehring K. Trade-offs between voice and silence: a qualitative exploration of oncology staff's decisions to speak up about safety concerns. *BMC Health Serv Res*. 2014;14(1):1–10. doi:10.1186/1472-6963-14-303.
38. Atwal A, Caldwell K. Do all health and social care professionals interact equally: a study of interactions in multidisciplinary teams in the United Kingdom. *Scand J Caring Sci*. 2005;19(3):268–273. doi:10.1111/j.1471-6712.2005.00338.x.
39. Neufeld DJ, Fang Y. Individual, social and situational determinants of telecommuter productivity. *Inform Manag*. 2005;42(7):1037–1049. doi:10.1016/j.im.2004.12.001.
40. Neufeld DJ, Wan Z, Fang Y. Remote leadership, communication effectiveness and leader performance. *Group Decis Negot*. 2010;19(3):227–246. doi:10.1007/s10726-008-9142-x.
41. Tseng H, Wang C, Ku HY, Sun L. Key factors in online collaboration and their relationship to teamwork satisfaction. *Q Rev Distance Educ*. 2009;10(2):195–206.
42. CultureiQ. 5 company culture books to inspire your team. https://cultureiq.com/blog/5-company-culture-books-to-inspire-you-your-team. Accessed May 4, 2020.
43. Zappos Insights. Zappos Culture Book. https://www.zapposinsights.com/culture-book. Accessed May 4, 2020.
44. Uni Global Union. The Right to Disconnect—UNI Campaign. http://www.thefutureworldofwork.org/stories/uni-global/right-to-disconnect-uni-campaign. Accessed May 4, 2020.
45. Von Bergen CW, Bressler MS, Proctor TL. On the grid 24/7/365 and the right to disconnect. *Employee Relat Law J*. 2019;45(2):3–20.
46. Fried J, Heinemeier Hansson D. *Remote: Office Not Required*. New York, NY: Crown Publishing Group; 2013.

47. Veinott ES, Olson J, Olson GM, Fu X. Video helps remote work. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems the CHI Is the Limit–CHI '99*. New York, NY: ACM Press; 1999:302–309.
48. Bly SA, Harrison SR, Irwin S. Media spaces: bringing people together in a video, audio, and computing environment. *Commun ACM*. 1993;36(4):28–46.
49. eLiterate. Canvas Surpasses Blackboard Learn in US Market Share. https://eliterate.us/canvas-surpasses-blackboard-learn-in-us-market-share. Accessed May 4, 2020.
50. Messenger J, Vargas O, Gschwind L. Working anytime, anywhere: the effects on the world of work. https://www.eurofound.europa.eu/publications/report/2017/working-anytime-anywhere-the-effects-on-the-world-of-work. Accessed May 4, 2020.
51. Github, Inc. Where we can hire. https://github.com/about/careers/remote. Accessed May 4, 2020.
52. Automattic Inc. All around the world, building a new web, and a new workplace. Join us! https://automattic.com/about. Accessed May 4, 2020.

Shuhan He, MD, is Associate Director of Digital Growth Strategy, Strategic Alliance Initiative, Center for Innovation in Digital HealthCare, Department of Emergency Medicine, Massachusetts General Hospital, Harvard Medical School; **Debbie Lai, BA,** is Honorary Senior Research Associate, University College of London; **Sarah Mott, MD,** is Staff Physician, Emergency Care Consultants; **Andrew Little, DO,** is Core Faculty, OhioHealth/Doctors Hospital Emergency Medicine; **Andrew Grock, MD,** is Faculty Physician, Division of Emergency Medicine, Greater Los Angeles VA Healthcare System, and Assistant Clinical Professor of Emergency Medicine, David Geffen School of Medicine, University of California, Los Angeles; **Mary R. C. Haas, MD,** is Assistant Program Director and Clinical Instructor, Department of Emergency Medicine, University of Michigan Medical School; and **Teresa M. Chan, MD, MHPE,** is Associate Professor, Division of Emergency Medicine, Department of Medicine, Faculty of Health Sciences, Adjunct Scientist, McMaster Program for Education Research, Innovation, and Theory, Program Director, Clinician Educator Area of Focused Competence Training Program McMaster University, Assistant Dean, Program for Faculty Development in the Faculty of Health Science, McMaster University, and Associate Editor, *Journal of Graduate Medical Education*.

The authors would like to thank all of the hardworking colleagues in the Academic Life in Emergency Medicine team, especially our founder and leader Dr Michelle Lin. Michelle, your leadership and coaching has made us all so very well prepared to serve as leaders at our respective centers during the COVID-19 pandemic and we are grateful for your mentorship over the years; the world of health care is better for all that you do.

Corresponding author: Teresa M. Chan, MD, MHPE, McMaster University, Department of Medicine, 237 Barton Street East, McMaster Clinics, Suite 255, Hamilton, Ontario L8L 2X2, Canada, 905.906.8981, teresa.chan@medportal.ca