



CAMPUS PRINCIPAL DE SHERBROOKE



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CAMPUS DE LONGUEUIL

# L'IMPACT DE LA **COVID-19** SUR LE MILIEU D'APPRENTISSAGE EN RADIOLOGIE.

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## Ce qu'on pensait que 2020 allait être



- <https://www.forbes.com/sites/cathyhack/2020/06/24/how-technology-will-create-these-7-jobs-in-the-future/#1df606457437>

## Ce que 2020 est réellement



- <https://www.psychiatryadvisor.com/home/topics/general-psychiatry/costs-of-social-isolation-loneliness-covid19/>



- <https://montrealgazette.com/news/local-news/coronavirus-quebecs-efforts-to-slap-down-curve-appear-to-be-working>





Job and financial  
insecurity



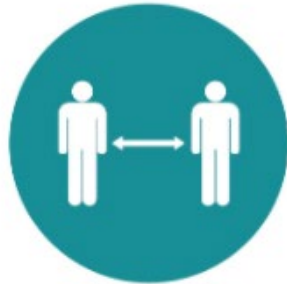
Stress of working  
from home



Medical treatment  
disruptions



School and college  
closures



Social exclusion and  
bereavement



Lack of access  
to food



Domestic violence



Fear of infection  
and contamination

- <https://www.arabnews.com/node/1669556/middle-east>



- <https://www.theglobeandmail.com/investing/globe-advisor/advisor-practice/article-why-covid-19-is-leading-to-stress-and-mental-depletion-among/>

## Soins patients et sécurité au travail

L'équipe de  
travail

Redéploiement

Interactions  
avec les patients

Interprétation

## Éducation et administration

Supervision

Apprentissage  
didactique

Recherche

Examens

## Bien être personnel

Sécurité

Relations  
sociales

# 1. SOINS PATIENTS ET SÉCURITÉ AU TRAVAIL

1. L'équipe de travail
2. Le redéploiement
3. Interaction avec les patients
4. Interprétation

# 1.1. L'ÉQUIPE DE TRAVAIL

- Perte de personnel et de résidents
- Postes de travail à 2 mètres
- Rotation de personnel (patrons, résidents ...) entre télétravail et en établissement
- Pistes de réussite:
  - Encourager le télétravail
  - Développer des outils pour faciliter le protocolage, l'interprétation et les réunions multidisciplinaires à domicile
  - Flexibilité de l'horaire de travail pour les résidents





## 1.2. LE REDÉPLOIEMENT

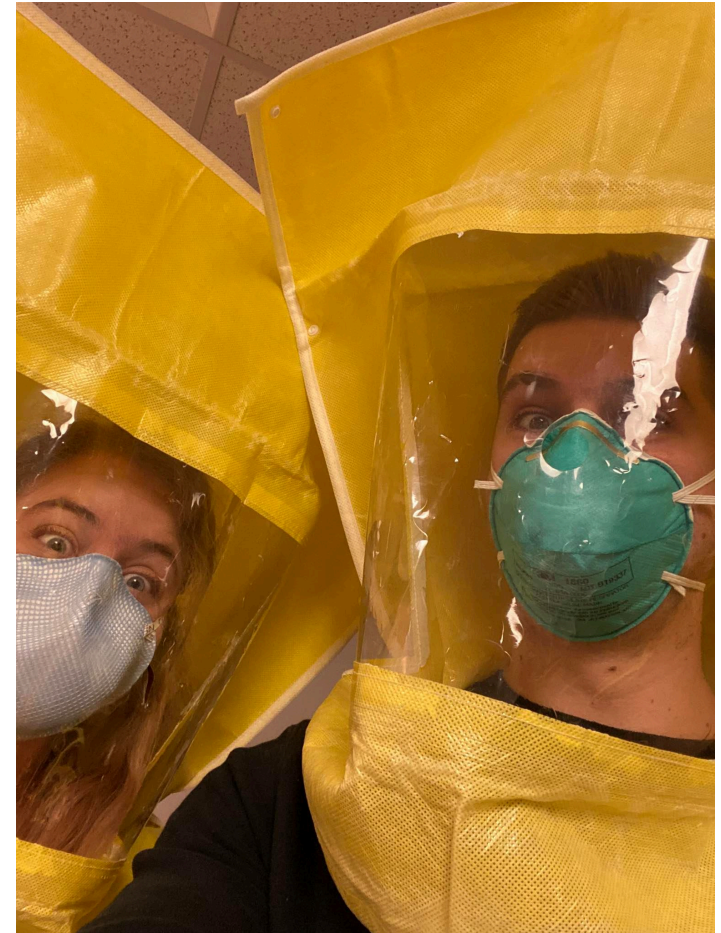
- Redéploiement des résidents dans d'autres départements
- Sur base volontaire si possible
- Pistes de réussite:
  - Former les résidents
  - Plan de redéploiement clair
  - Supervision appropriée
  - Limite d'heures précises



• [https://www.arabnews.jp/en/middle-east/article\\_15030/](https://www.arabnews.jp/en/middle-east/article_15030/)

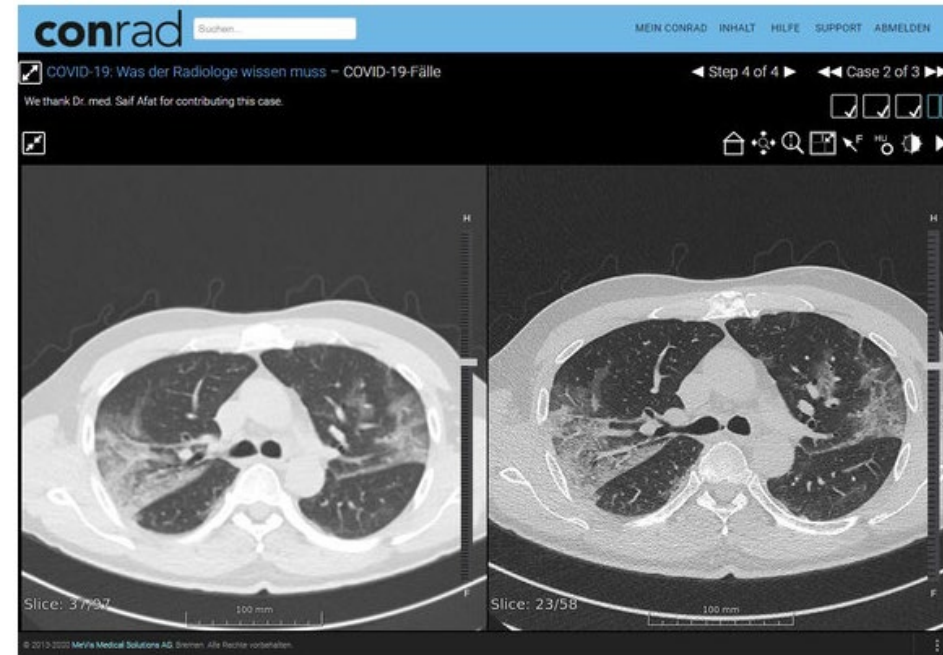
## 1.3. L'INTERACTION AVEC LES PATIENTS

- Formation et utilisation des équipements de protection
- Annulation de plusieurs procédures
- Pistes de réussite:
  - Diminuer le temps d'exposition avec les patients à risque
  - Diminuer le nombre de personnes exposées



## 1.4. INTERPRETATION

- Enseignement sur les trouvailles liées à la COVID-19
- Utilisation du CT dans l'aide au diagnostic pour le COVID et les complications
- Webinar en ligne
- Pistes de réussite:
  - Template préétablit
  - Rapports standardisés



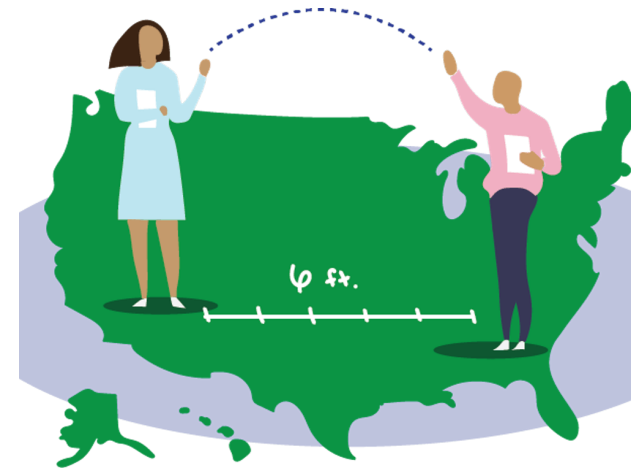
- <https://www.mevis.de/en/solutions/professional/mevis-online-academy/webinar-for-radiologists-on-best-practices-on-covid-19>

## 2. ÉDUCATION ET ADMINISTRATION

1. Supervision
2. Apprentissage didactique
3. Recherche
4. Examens et certification

## 2.1. SUPERVISION

- Supervision et enseignement à distance
- Peut être difficile si première rotation
- Pistes de réussite:
  - Encourager les téléconférences
  - Encourager la description détaillée des lésions au téléphone



<https://www.cavalierdaily.com/article/2020/03/faculty-staff-address-student-concerns-for-coping-with-covid-19-stigma-and-stress>



## 2.2. ENSEIGNEMENT DIDACTIQUE (1)

- Enseignement présentiel transformé en virtuel
- Ressources d'enseignement digital
- Pistes de réussite:
  - Encourager l'audience à répondre
  - Encourager l'apprentissage actif
  - Banque de ressources

- <https://bit.ly/foamrad>

#FOAMrad (Free Open Access "Meducation" - radiology) resources [bit.ly/foamrad](https://bit.ly/foamrad)

[Google calendar](#) of Live Radiology virtual lectures/webinars/tweet-chats. Subscribe to the calendar by clicking the icon in the right lower corner.



For edits, please email [patricia.balthazar@emory.edu](mailto:patricia.balthazar@emory.edu) or DM on Twitter [@PBalthazarMD](https://twitter.com/PBalthazarMD).

### Body:

- [AUR core resident radiology lectures](#)
- SAR 2020 annual meeting [Top 10 Plenary Lectures](#) as selected by RFS
- Abdominal Coast to Coast [case conference \(YouTube recordings\)](#)
- [LearnAbdominal](#) - call cases (great for call prep)
- [Prostate MRI](#) interactive cases
- SAR Prostate Cancer DFP [YouTube channel](#) with short QA lectures
- SAR Prostate Cancer DFP teaching [cases of the week](#)
- Liver Imaging Online Course, recorded lectures [Youtube channel](#) and [Facebook page](#) with pdfs.
- [SABI \(previously SCBTMR\) recorded lectures](#)
- [Liver Atlas: An Online Reference for Liver Imaging.](#)

### Body Ultrasound:

- OB US from American College of Ob/Gyn [Video Lectures](#)
- [MyMiniFellowship](#) free YouTube videos - OB/GYN US
- [Ultrasound lectures from UCSD](#)
- [SRU "Head to Toe" video lectures](#)
- Fetal Medical Foundation (FMF) - [Lectures and webinars](#)

### Cardiac:

- U Virginia [Cardiac MRI curriculum](#)

### Chest

- STR [COVID Updates video](#)
- STR [Resident Bootcamp videos](#)
- STR [Cardiothoracic Core curriculum](#)
- [HRCT lectures](#) (free account needed)
- [Case of the month - Hong Kong College Of Radiologists.](#)
- [Weekly Chest Cases - Korean Society of Thoracic Radiology](#)

### Emergency Radiology

- ASER [Interesting cases](#) (scrollable)
- ASER call prep [video lectures](#)
- ASER [Emergency Imaging Course](#)
- iPad App - "[Radiology 2.0: One night in the ED](#)" by Daniel Cornfeld, MD (scrollable annotated cases)
- iPad App - "[Radiology 2.0: Head CT's](#)" by Daniel Cornfeld, MD (scrollable annotated cases)

## 2.2. ENSEIGNEMENT DIDACTIQUE (2)

- Varier les outils d'apprentissage

*«I do urge the radiology community to continue to emphasize case conferences in educational pedagogy by allowing trainees to discuss unknown cases. I also believe in using various tools in educational paradigms, including multiple-choice questions, because a diverse approach to educational methods is critical since trainees have different learning styles. »*

— Omer A. Awan, MD, MPH, CIIP

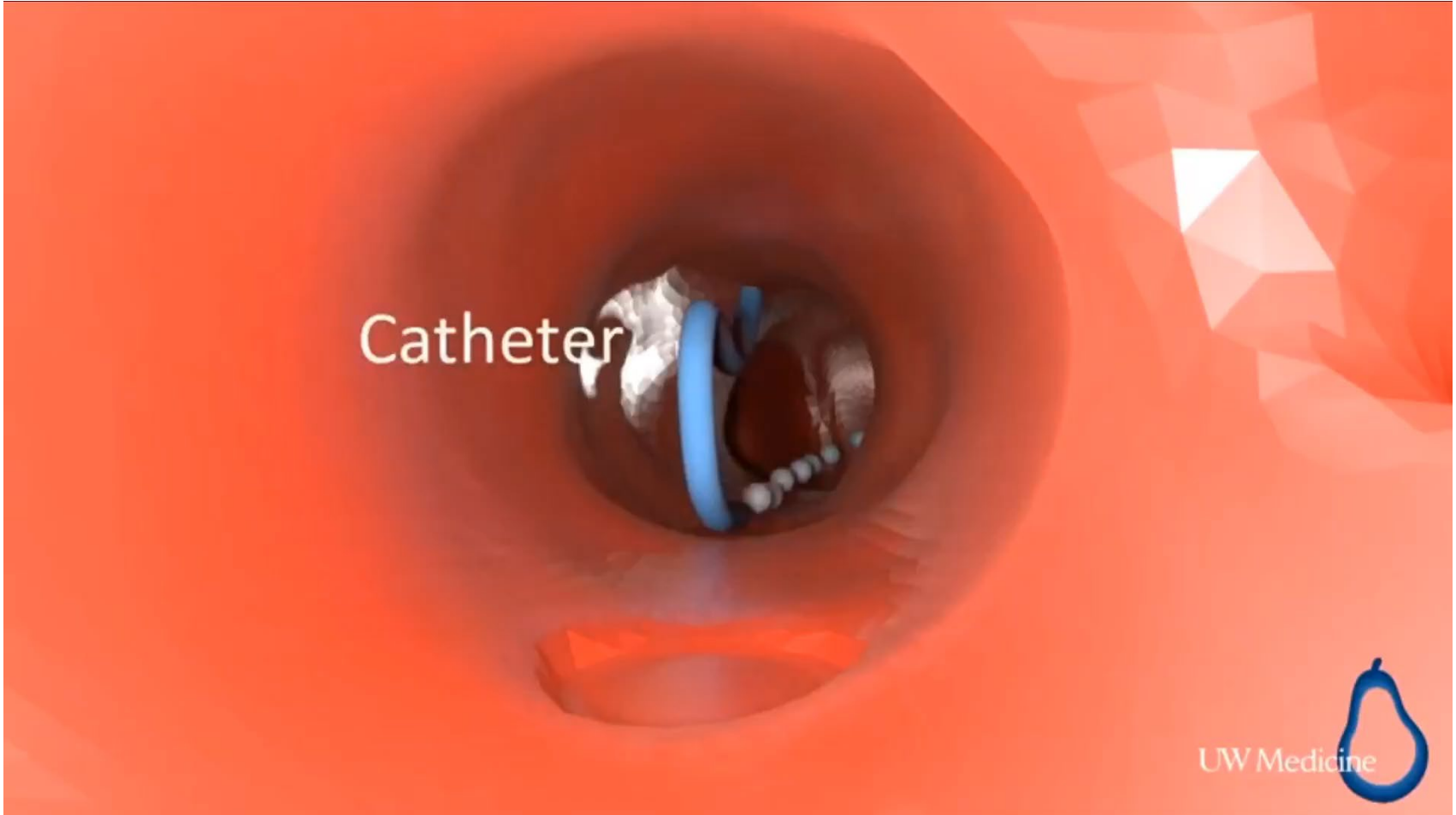
# Implementing Virtual and Augmented Reality Tools for Radiology Education and Training, Communication, and Clinical Care

*Raul N. Uppot, MD • Benjamin Laguna, MD • Colin J. McCarthy, MD • Gianluca De Novi, PhD • Andrew Phelps, MD • Eliot Siegel, MD • Jesse Courtier, MD*

From the Department of Radiology, Division of Interventional Radiology, Massachusetts General Hospital, 55 Fruit St, Gray 290, Boston, MA 02114 (R.N.U., C.J.M.,



**Figure 6:** Students scanning a Quick Response (QR) code to access virtual reality content. **(a)** Students use their personal smartphones to scan a QR code in a PowerPoint (Microsoft, Redmond, Wash) presentation. **(b)** Students view content by using a stereoscopic viewer attached to their phones. **(c)** Smartphone and stereoscopic viewer show an interventional radiology (IR) CT suite. (Plastic viewer provided by Surgical Theater [Surgical Theater, Mayfield, Ohio]). **(d)** Active QR code available for *Radiology* journal readers to experience our IR suite by using their smartphone. [Instructions: Download Vimeo [New York City, NY]. Open photograph app. Scan QR code above. Click "OK" to open in Vimeo. Turn phone to landscape mode. Look around our IR suite].



- [https://www.youtube.com/watch?v=EDtAy4OovB4&ab\\_channel=UWMedicine](https://www.youtube.com/watch?v=EDtAy4OovB4&ab_channel=UWMedicine)

## 2.3. RECHERCHE

- Suspension de fonds pour la recherche
- Diminution de la participation des patients

# Trois médicaments contre la COVID-19 testés à Sherbrooke



RENÉ-CHARLES QUIRION  
La Tribune



**Des chercheurs sherbrookoïses testeront trois médicaments auprès de patients volontaires déclarés positifs à la COVID-19 qui sont hospitalisés au CIUSSS de l'Estrie-CHUS.**



## 2.4. EXAMENS ET CERTIFICATION

- Retard des examens du collège royal
- Graduation virtuelle
- Diminution du nombre de cas requis pour la certification (mammographie)
- Fellowships annulés
- Pistes de réussite:
  - Banque de cas en ligne ou préparée par le département



- [https://ohmnilabs.com/media/robots-virtual-graduation/?et\\_blog](https://ohmnilabs.com/media/robots-virtual-graduation/?et_blog)

# 3. BIEN-ÊTRE PERSONNEL

1. Sécurité
2. Relations sociales

## 3.1. SÉCURITÉ (1)

- Le stress d'un équilibre entre vie professionnelle à risque et vie personnelle
  - Contamination entourage vs nous-même
- Degré de stress relié à la clarté des informations reçues



- <https://cmajnews.com/2019/06/19/stress-of-first-postgraduate-year-leaves-mark-at-cellular-level-for-medical-trainees-cmaj-109-5770/>

## 3.1. SÉCURITÉ (2)

- Pistes de réussite:
  - Transmettre les informations clairement
  - Être transparent
  - Créer une équipe COVID
  - Ligne directrice pour les équipes de back-up
  - Formation EPI pour tous
  - Ressources sur la résilience (méditation etc...)



- <https://montrealcowork.com/diriger-equipe-travail/>

## 3.2 RELATIONS SOCIALES

- Distanciation sociale ne veut pas dire isolement

- Pistes de réussite:
  - Rester connecter entre collègues
  - Réseauter en ligne

- #RadRes

- Engage.acr.org



The screenshot shows a Twitter post from Mohit Agarwal (@MohitAgNeurorad) dated Oct 9. The tweet is about a quiz titled "#MCWNeuroradBTW 009 Ans: Parotid Space!". The tweet text includes: "Check out discussion on PPS- the GPS of the neck in #TeachingMoment", "Click on link for a video tutorial: [mcw.hosted.panopto.com/Panopto/Pages/...](https://mcw.hosted.panopto.com/Panopto/Pages/...)", and "Thanks to all the participants!". Below the text are several hashtags: #FOAMed #FOAMrad #radres #MedEd #RadEd #HNRad #NeuroTwitter #MedTwitter. At the bottom of the tweet are four image thumbnails. The first thumbnail shows a CT scan of the neck with a question: "What space is the mass located in?". The second thumbnail shows the answer: "Q1. Older male presents with right neck mass. What space is the mass located in? Ans: Right parotid space" and "Q2. The predominant content of the parapharyngeal space is: Glandular tissue, Adipose tissue, Vascular tissue, Muscular tissue". The third thumbnail is titled "Parapharyngeal space" and lists several key points about its anatomy and contents. The fourth thumbnail is titled "Teaching moment - Parapharyngeal space: the GPS of the neck" and shows four different CT scan slices with labels for various anatomical structures.



# PISTES DE RÉUSSITE

## Summary of COVID-19 Impact on Radiology Trainees and Potential Solutions

### Category and Area of Impact Potential Solutions

#### Patient care and workplace safety

Staffing	Create infrastructure for remote interpretation; configure rotations for distancing with flexibility and backup
Patient interactions	Postpone elective imaging and procedures; ensure adequate personal protective equipment; avoid multiple proceduralists for interventions if feasible
Interpretation	Provide training in COVID-19 CT interpretation and standardize reporting
Clinical redeployment	Solicit volunteers for redeployment to direct patient care roles if needed, but consider drafting those most qualified; reschedule ESIR-mandated ICU month to meet clinical manpower needs; ensure appropriate orientation and supervision during redeployment

#### Education and administration

Supervision	Establish teleconferencing for readouts and didactic conferences
Didactic learning	Distribute online educational resources (see <a href="https://tinyurl.com/vawf34v">https://tinyurl.com/vawf34v</a> for a list collated under the social media hashtag and concept #FOAMRad [free and open access medical education in radiology])
Research	Work with mentor or principal investigator to participate in remotely accessible research opportunities
Credentialing, including ESIR	Review and, if necessary, reassess trainee competency criteria given decreases in case volume; reschedule ESIR ICU and IR rotations for 3rd-year residents to enable preparation for the delayed core examination

#### Personal wellness

Safety	Provide prompt and clear communication about infection control policies and occupational health guidelines; establish access to online resources for personal resilience
Social	Promote online networking
Financial	Expand childcare services; provide paid leave for COVID-related quarantine and/or illness; encourage flexibility in academic fund usage; establish virtual fellowship interviews

Note.—COVID-19 = coronavirus disease 2019, ESIR = early specialization in interventional radiology, ICU = intensive care unit, IR = interventional radiology.

# QUESTIONS ?

*«The mediocre teacher tells. The good teacher explains.  
The superior teacher demonstrates. The great teacher  
inspires. »*

—William Arthur Ward



# RÉFÉRENCES

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2990753/>
- <https://www.cavalierdaily.com/article/2020/03/faculty-staff-address-student-concerns-for-coping-with-covid-19-stigma-and-stress>
- Alvin, Matthew D and al. «The Impact of COVID-19 on Radiology Trainees.» *Radiology*, 27 March 2020: 246-248.
- Awan, Omer. "What Makes a Great Teacher?" *Radiographics*, december 2019: 2167-2168.
- Uppot, Raul N. "Implementing Virtual and Augmented Reality Tools for Radiology Education and Training, Communication, and Clinical Care." *Radiology*, June 2019: 570-580.
- Awan, Omer A. "Have We Done Radiology Trainees a Disservice by Eliminating the Oral Board Examination?" *Radiographics*, March 2020: 605-606.