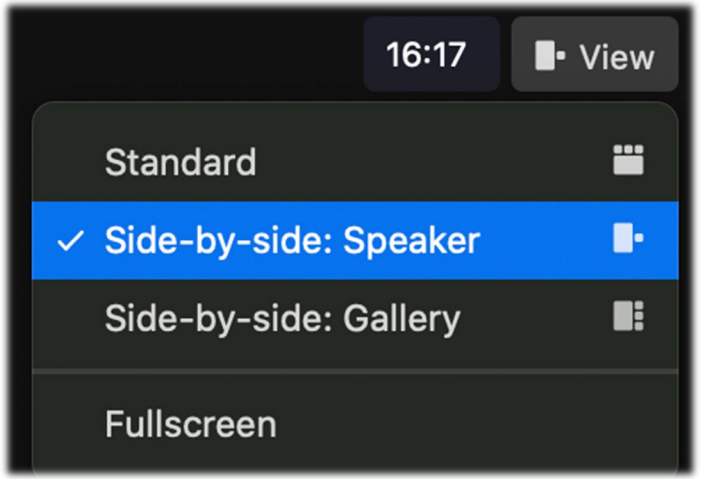
AUPN Spring Chair's Session

Challenges & Opportunities in Neurology Education in the Virtual Era

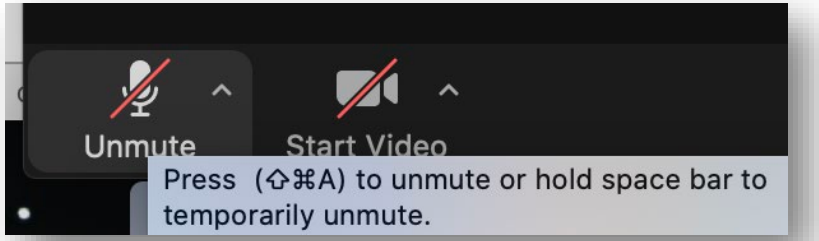
Moderated by:
David G. Standaert, MD, PhD;
University of Alabama at Birmingham

AUPN
Association of University Professors of Neurology

Housekeeping



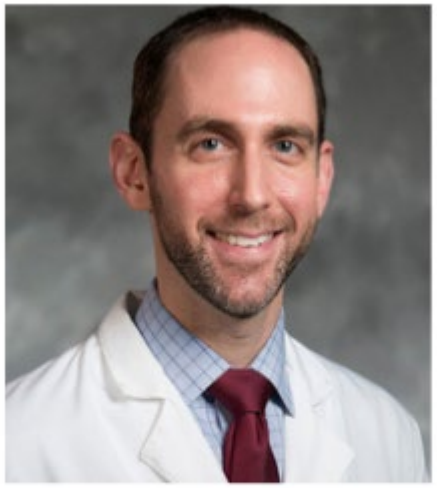
- Zoom Meeting
- Speakers will have cameras on
- For the slide presentation segment, we suggest using the “Side-by-side: Speaker” view
- Please keep your lines muted to preserve audio quality
- During the open discussion, attendees are welcome to raise hand, or voice questions aloud to the group. During the discussion we recommend using Gallery view.



Welcome

- Meet Today's Speakers

David G. Standaert, MD, PhD
University of Alabama
at Birmingham



Andrew Spector, MD
Duke University
School of Medicine

Kimberly S. Jones, MD
University of Kentucky
Medical Center

Khurram Bashir, MD, MPH
University of Alabama
at Birmingham

Agenda

- Review Today's Learning Objectives
- *Harnessing Telehealth to Improve Diversity in Neurology* - Dr. Spector
- *Challenges and Opportunities for Resident Recruitment in the Virtual Era* – Dr. Jones
- *Remote Learning and Current Trainees: Practicing and Teaching Medicine for a Virtual Future at the Graduate Level.* – Dr. Bashir
- Open Discussion

Learning Objectives

- Describe the challenges presented by the recent need to move undergraduate and graduate medical education in Neurology to a virtual format.
- Discuss the opportunities for education created by the use of virtual technologies.
- Consider how the use of virtual technology will impact education in the post-COVID era.

Harnessing Telehealth to Improve Diversity in Neurology

The Duke Underrepresented in Neurology Tele-shadowing Experience

Andrew Spector, M.D., F.A.A.S.M.
Vice Chair, Inclusion, Diversity, and Empowerment
Duke University Department of Neurology

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Outline

- Current state of diversity in neurology
- Review of data on why students choose neurology
- Duke Underrepresented in Neurology Tele-shadowing Program
- Other virtual venues to improve diversity in neurology

Diversity

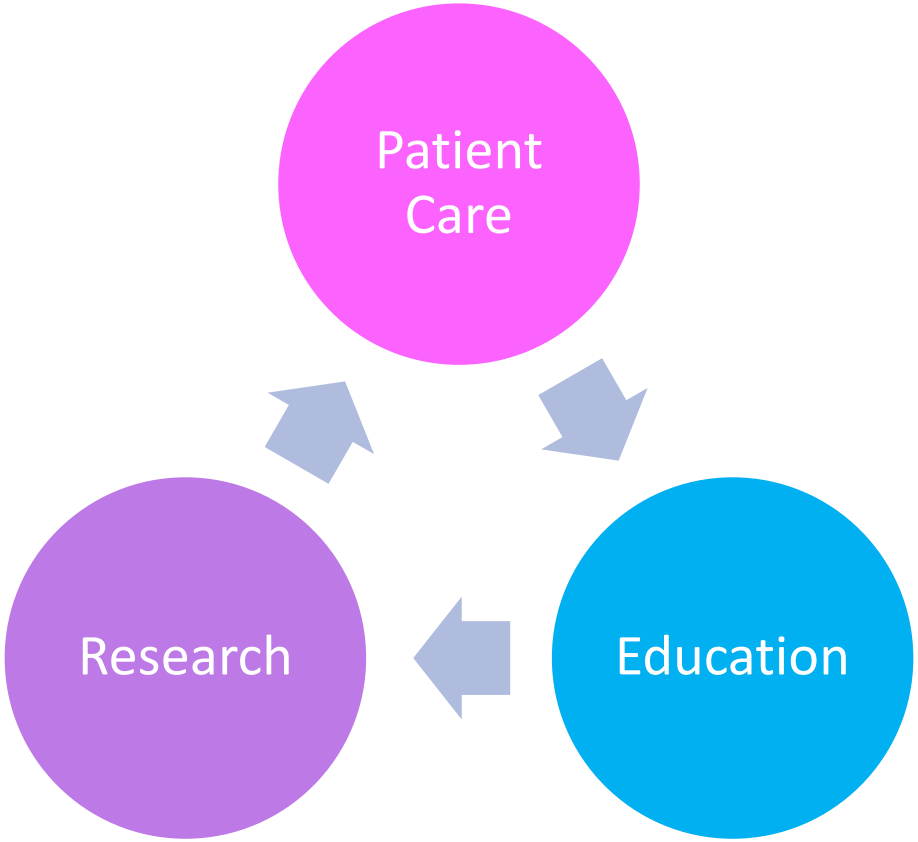
- Race and ethnicity
- Gender identity and sex
- Sexual orientation
- Age
- Religion
- Politics
- Ability
- Economics
- Education

Caveat

For the purposes of this talk:

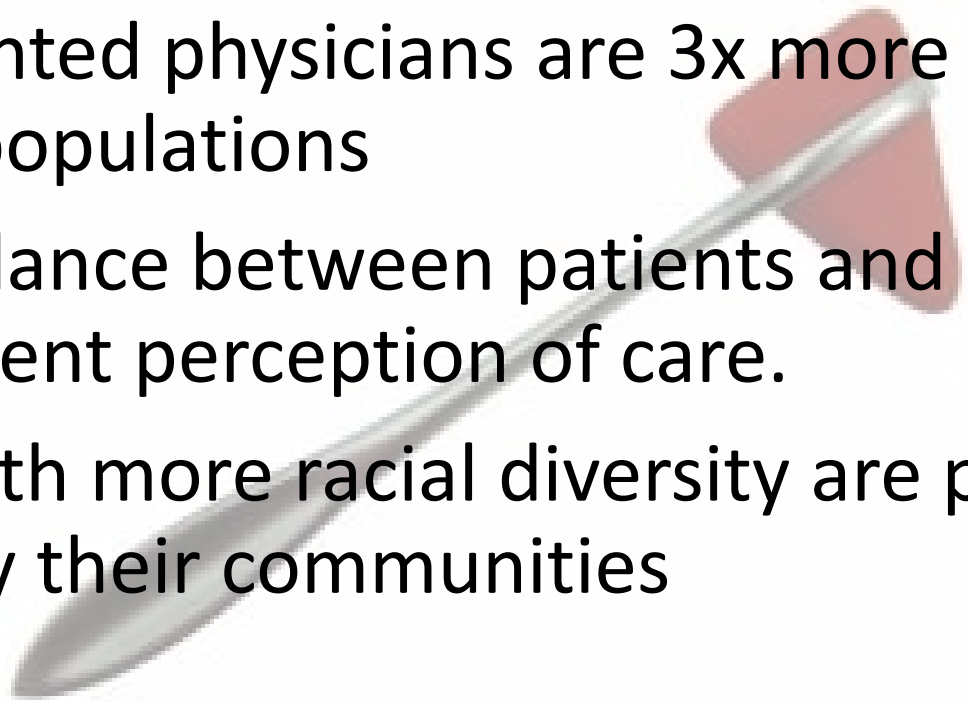
"Diversity" = racial and ethnic diversity

Why does diversity matter?



Reference: Succeeding in Academic Medicine, Ed. John Sanchez, 2020

The Case For Diversity in Patient Care



- Underrepresented physicians are 3x more likely to treat underserved populations
- Racial concordance between patients and physicians enhanced patient perception of care.
- Institutions with more racial diversity are perceived as more trustworthy by their communities

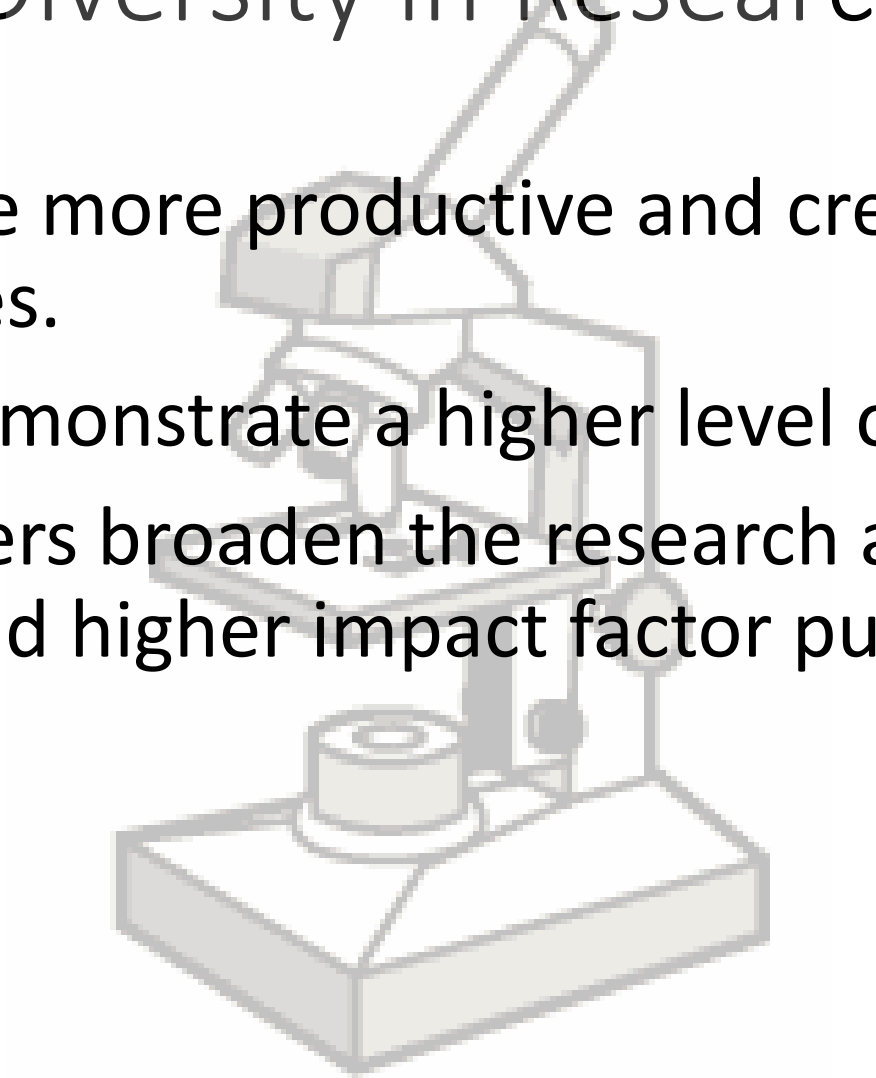
Reference: Succeeding in Academic Medicine, Ed. John Sanchez, 2020

The Case for Diversity in Education

- Faculty of color were more likely to employ active learning, encourage student input, and include perspectives of other people of color in their courses.
- Students who interact with racially diverse peers show increased engagement, motivation, and growth in skills.

Reference: Succeeding in Academic Medicine, Ed. John Sanchez, 2020

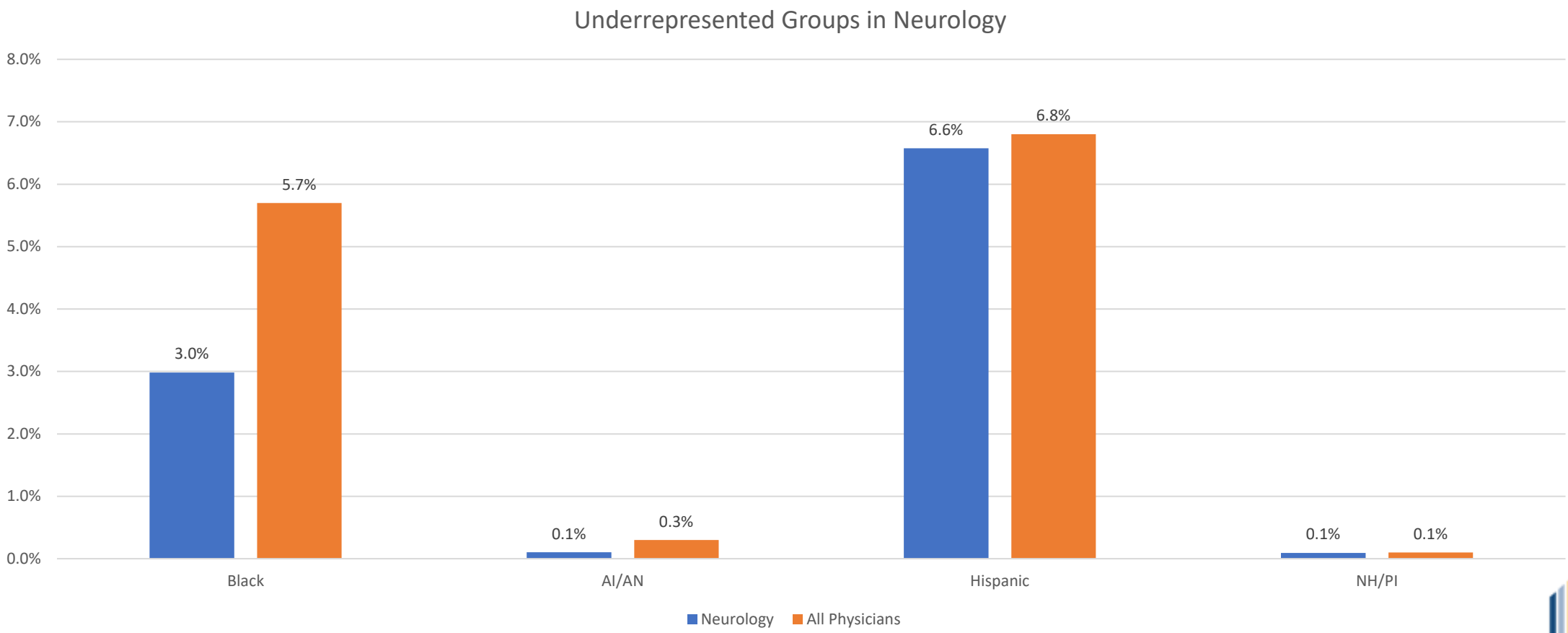
The Case for Diversity in Research



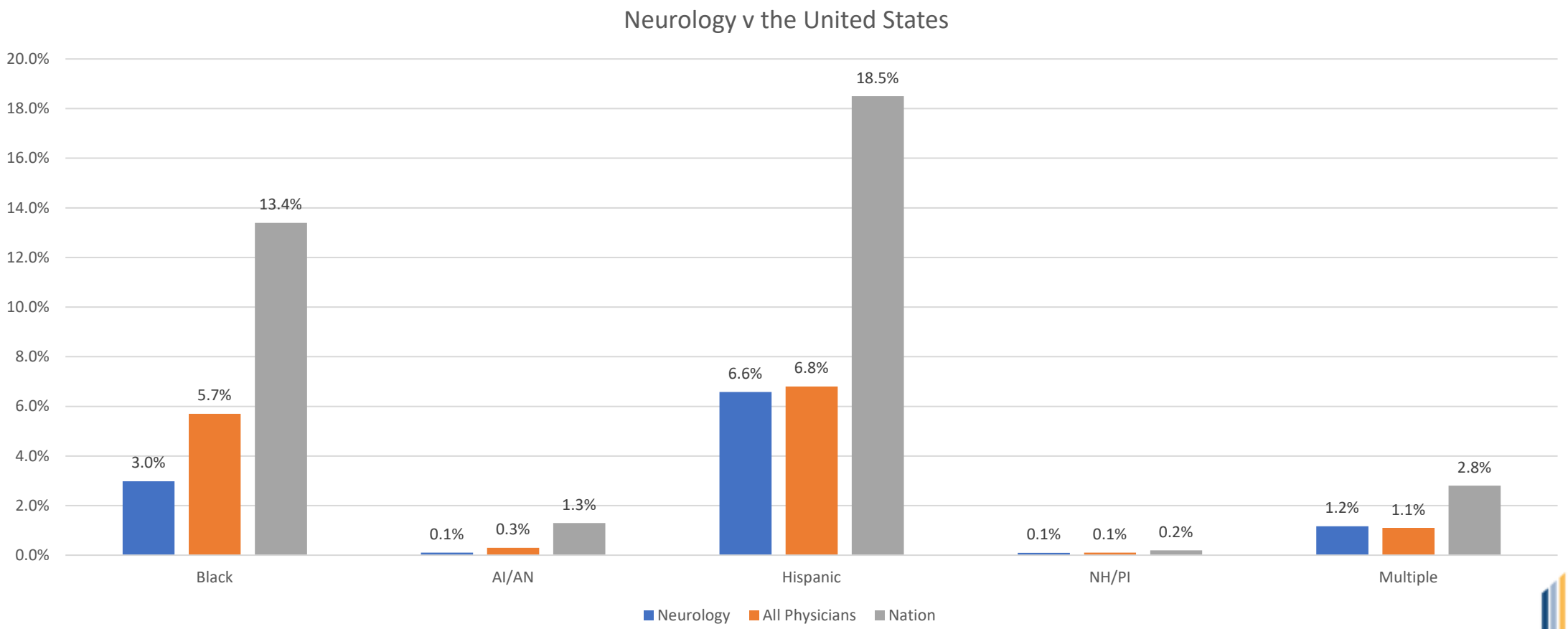
- Diverse teams are more productive and creative than homogenous ones.
- Diverse teams demonstrate a higher level of critical analysis
- Diverse researchers broaden the research agenda and have more citations and higher impact factor publications.

Reference: Succeeding in Academic Medicine, Ed. John Sanchez, 2020

Neurology Workforce (AAMC 2018)



Underrepresentation



Why do Students Choose Neurology

- Top 3 factors associated with choosing neuro (Gutmann et al 2019)
  - Pre-clinical and clinical neurology/neuroscience experience
  - MD/PhD
  - Undergraduate curriculum in brain science

- Top 4 suggestions to increase neurology selection (Jordan et al 2020)
  - Clinical connections to basic neuroscience
  - Early and diverse clinical experiences
  - Improving teacher-learner interactions
  - Better marketing of neurology as a specialty choice

Variations by Race

- Data from Spector and Railey, *under review*
- Surveyed 199 medical students from 19 states
  - Black students noted being strongly influenced by pre-medical experiences
  - Black students placed more emphasis on pre-clinical work than White students did and this was a negative factor for choosing neurology
  - No Black students cited neurophobia; several Asian and White students did
  - Lack of racial diversity was cited 4th most often by Black students as a deterrent to entering neurology

Underrepresented in Neurology Tele-shadowing Experience

The Duke Department of Neurology is pleased to invite you to apply for the opportunity to shadow a Duke Neurology provider during a tele-health (video) clinic. This opportunity will allow you to witness first-hand the rewarding and intellectually stimulating nature of the practice of Neurology. If you are considering a career in brain science or medicine or know already that Neurology is for you, we invite you to join us for this unique opportunity.

Duke Neurology recognizes that diversity is necessary to achieve excellence. Historically, many groups have been excluded from careers in Neurology based on their identities. We at Duke Neurology encourage members of traditionally under-represented groups to consider careers in Neurology. To that end, we want to provide the opportunity for members of these groups to experience what it means to be a neurologist.

Our experience is targeted to current undergraduates and recent graduates who are not currently medical students but considering attending medical school in the future. If you are interested in being considered for a shadowing experience with one of our Neurologists, please complete the application below. If you are selected, we will do our best to match you to one of the subspecialties of your choice. Shadowing experiences start at one half-day clinic but could be extended in some circumstances.

Please note, this program is not for academic credit and Duke faculty will be unable to provide letters of recommendation at the completion of the program. This program is not affiliated with the Duke University School of Medicines admissions process and will not influence admissions to our medical school.

Thank you for the overwhelming interest in this program. We have received a large number of applications and are building a wait list of students to accommodate experiences for as many interested young future physicians as possible. Applicants: when filling out the application, please indicate availability starting January 2021.

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UIN Tele-shadowing Motivation

- ✓Clinical connections to basic neuroscience
- ✓Early and diverse clinical experiences
- ✓Improving teacher-learner interactions
- ✓Better marketing of neurology as a specialty choice
- ✓Black students noted being strongly influenced by pre-medical experiences

Tele-shadowing Process

Student applies via website

Administrator processes application

- Screens for program eligibility
- Provides applicants with paperwork
- Facilitates scheduling

Student joins telehealth visits via Zoom

Session lasts for a half day; one session per student

Application

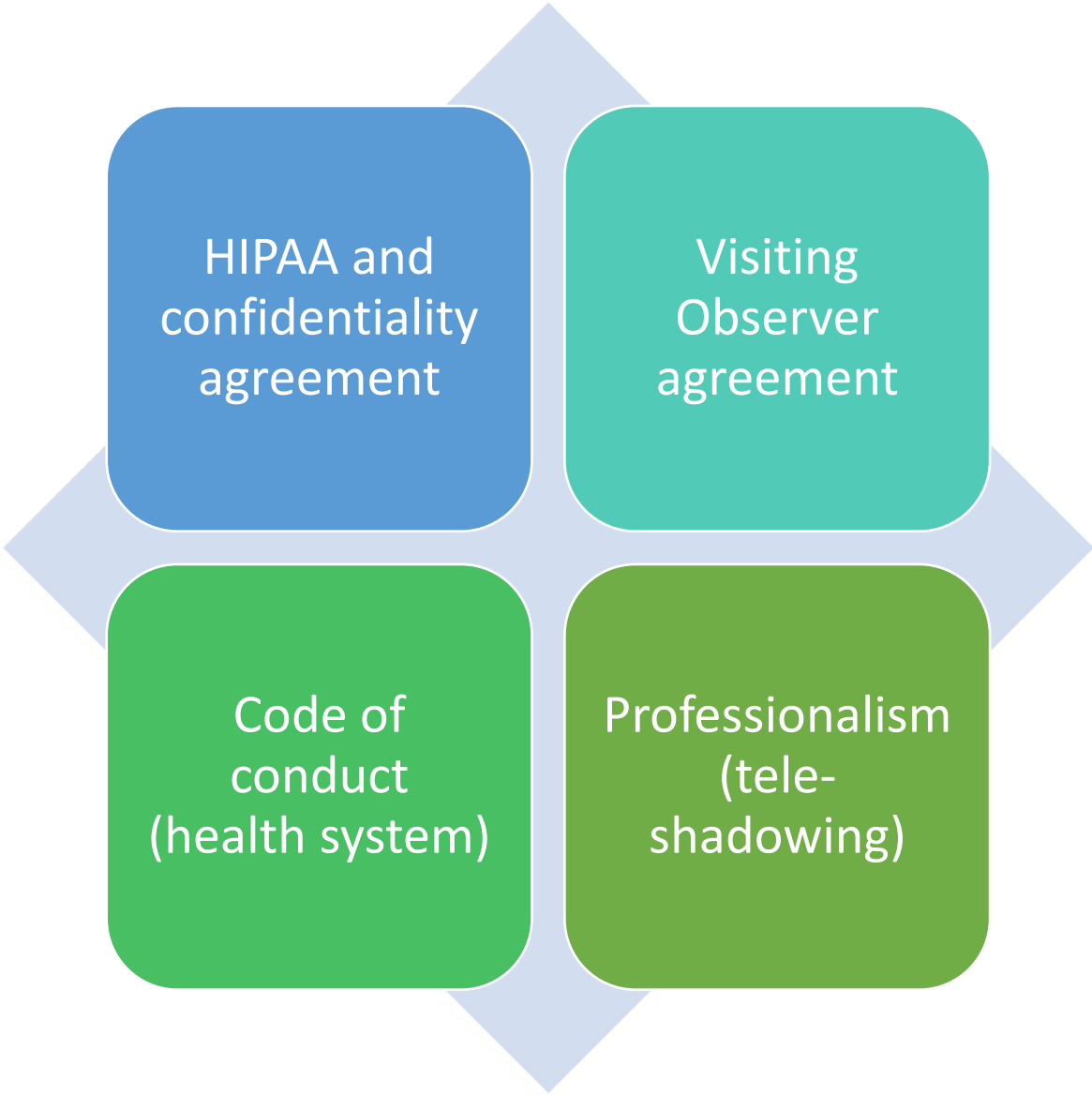
Student must be in college or recent graduate (not med student)

Interest in pursuing med school (not neurology specifically)

No pre-defined criteria for diversity. Students can tell us how they would diversify neurology.

Student prioritizes subspecialties of interest

Training


HIPAA and confidentiality agreement
Visiting Observer agreement
Code of conduct (health system)
Professionalism (tele-shadowing)

Feedback

- 25 students have shadowed, ~100 on wait list
- 5 MDs, 2 APPs precepting
- Epilepsy, General, Sleep, Movement, HA
- Students heard about program through social media and college lists
- 100% would recommend to others
- 90% are more likely to consider Neurology
- 90% rated experience “Great”

SWOT Analysis

- Strengths
  - Offers students a chance to shadow during pandemic and beyond
  - Targets underrepresented populations
  - Low time commitment by faculty
  - Inclusive of APPs
  - Builds goodwill for future residency recruitment
- Weaknesses
  - Brief exposure
  - No longitudinal follow-up
  - Wait list of ~100 students

SWOT Analysis

- Opportunities
  - Partnerships with other institutions
  - Longitudinal experience when wait list is shorter
  - Track students over time
- Threats
  - Long wait list could backfire (discourage students due to frustration)
  - Tele-health could be greatly reduced
  - Program might prove to have no impact

Partnerships

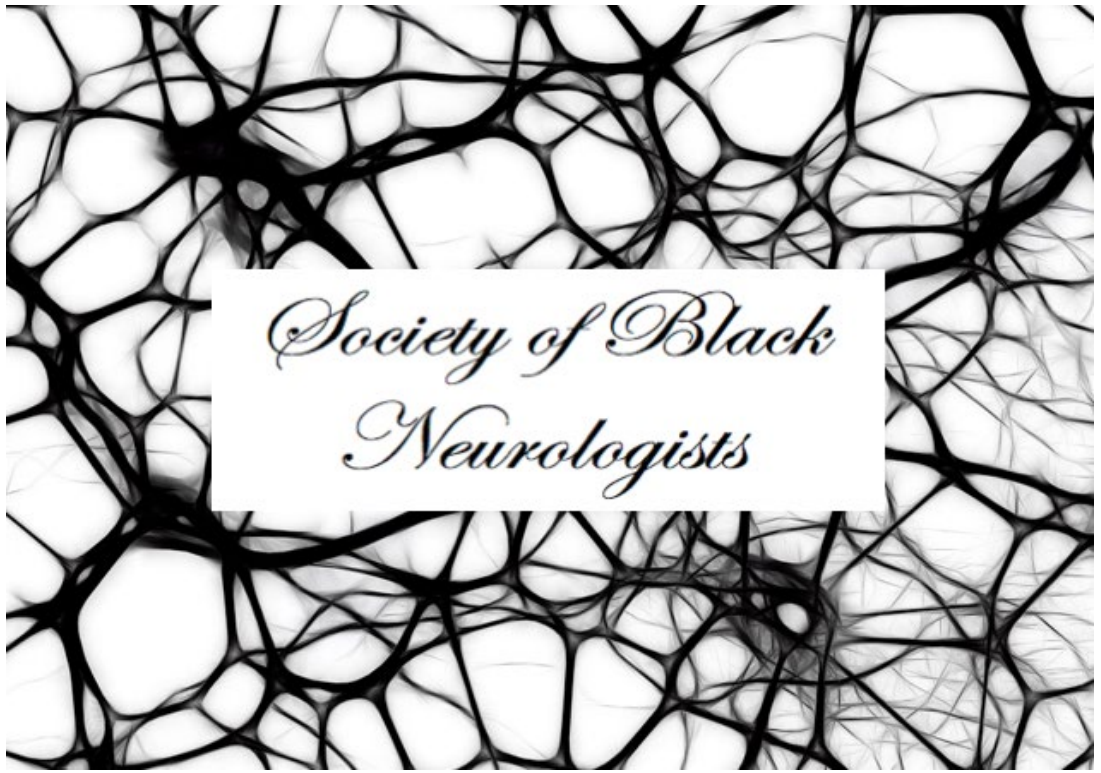
- Compliance approval
- Confirm technology
- Identify Attendings/APPs
- Revise documents to be institution-specific
- Designate coordinating administrator

Other Opportunities

- 275 members
- Pre-med student through attendings

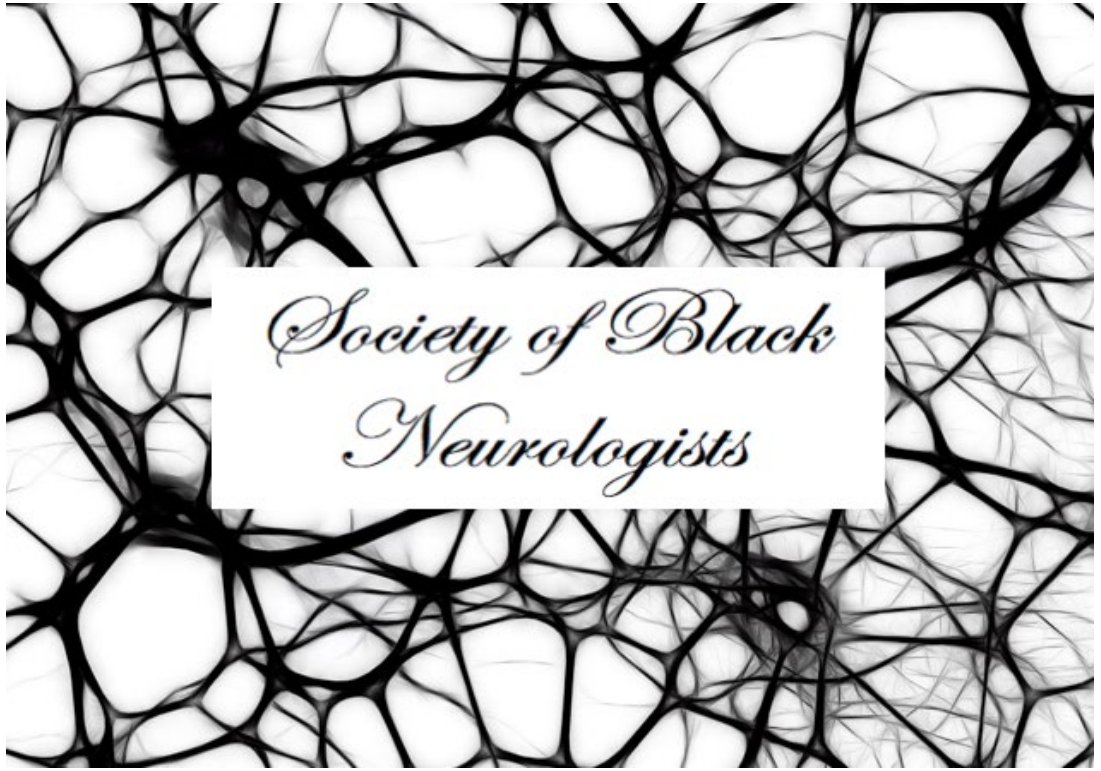
✓Better marketing of neurology as a specialty choice

✓Lack of racial diversity was cited 4th most often by Black students as a deterrent to entering neurology

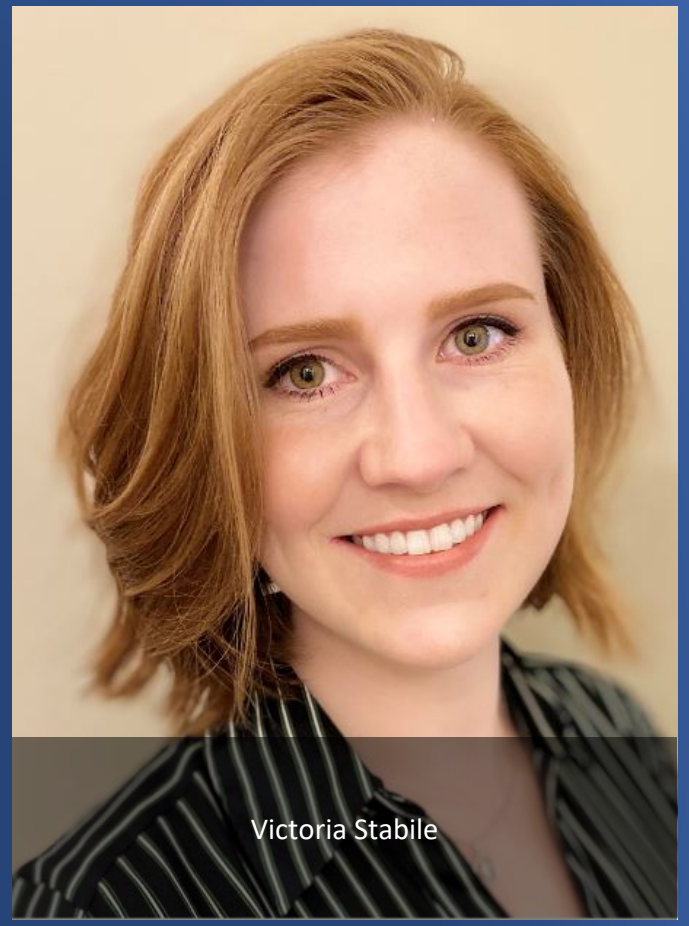


Society of Black Neurologists

- Virtual mentorship and sponsorship
- Webinars on applying to neurology
- Partnerships with UIN Section of AAN and SNMA



Acknowledgements



Challenges & Opportunities for Resident Recruitment in the Virtual Era

Kimberly S. Jones, MD
Associate Professor of Child Neurology
Child Neurology Residency Program Director
Medical Director Child Neurology, Kentucky Neuroscience Institute
University of Kentucky Medical Center

College of Medicine
Department of Neurology

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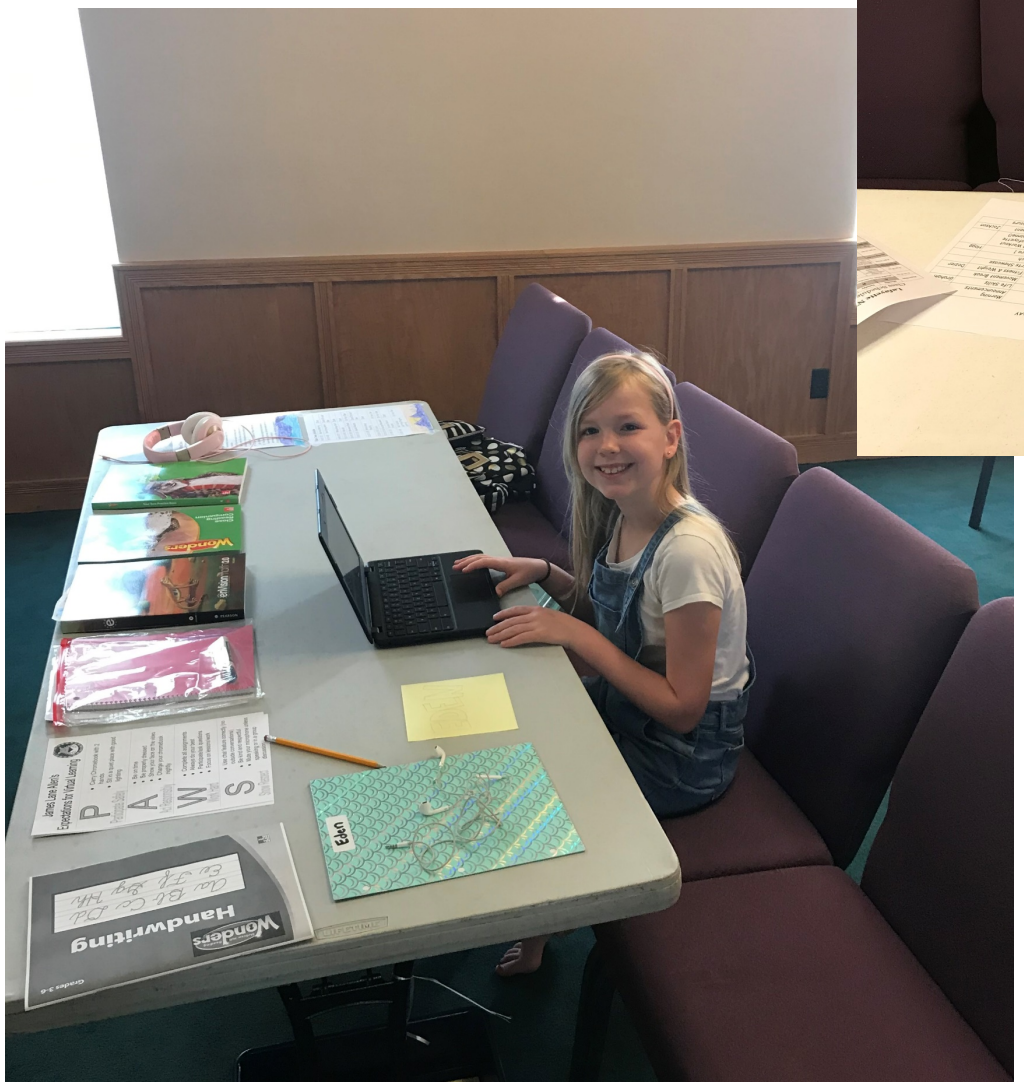
I have no financial disclosures
But I have great kids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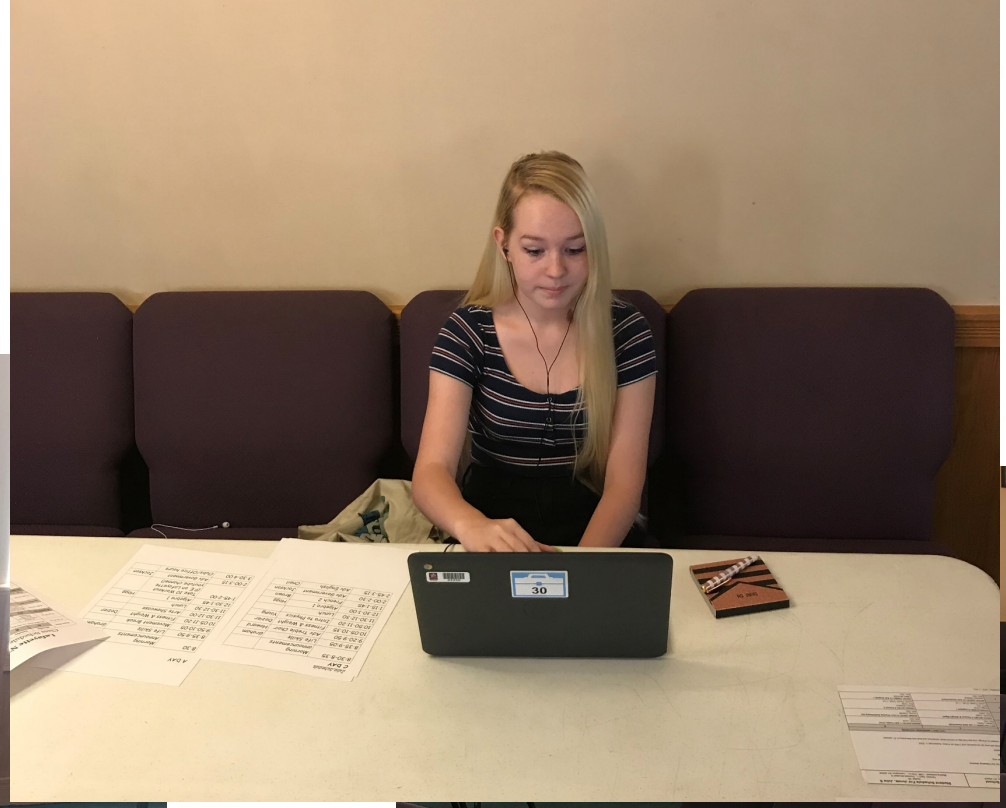
Wonders
Ethan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Handwriting

Innovation

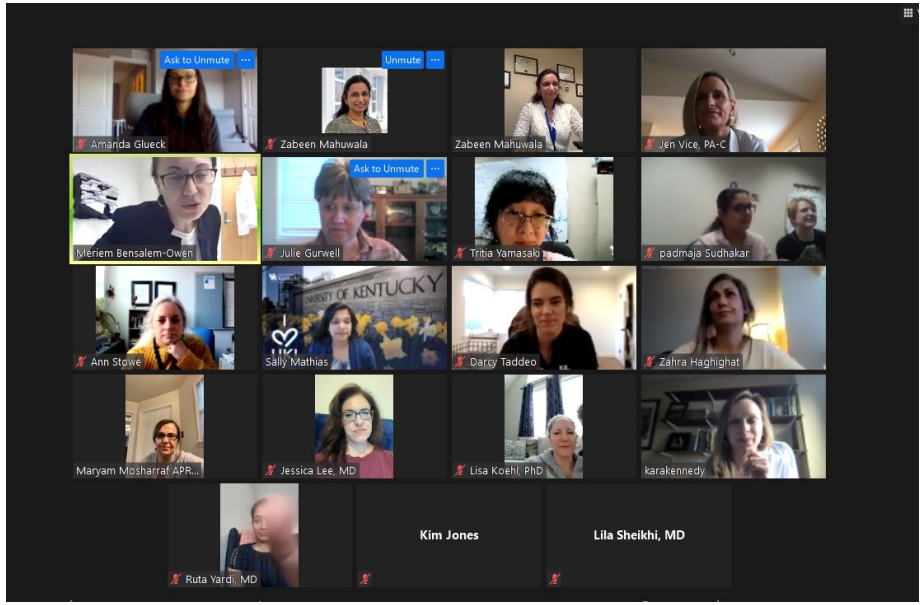
- Virtual didactic conferences
- Telemedicine outpatient appointments
- Zoom for rounding in the hospital

Innovation

- Virtual didactic conferences
- Telemedicine outpatient appointments
- Zoom for rounding in the hospital
- Mentor meetings
- Research planning meetings
- Meetings, meetings, meetings……

Finding Ways to Connect

Jujitzu



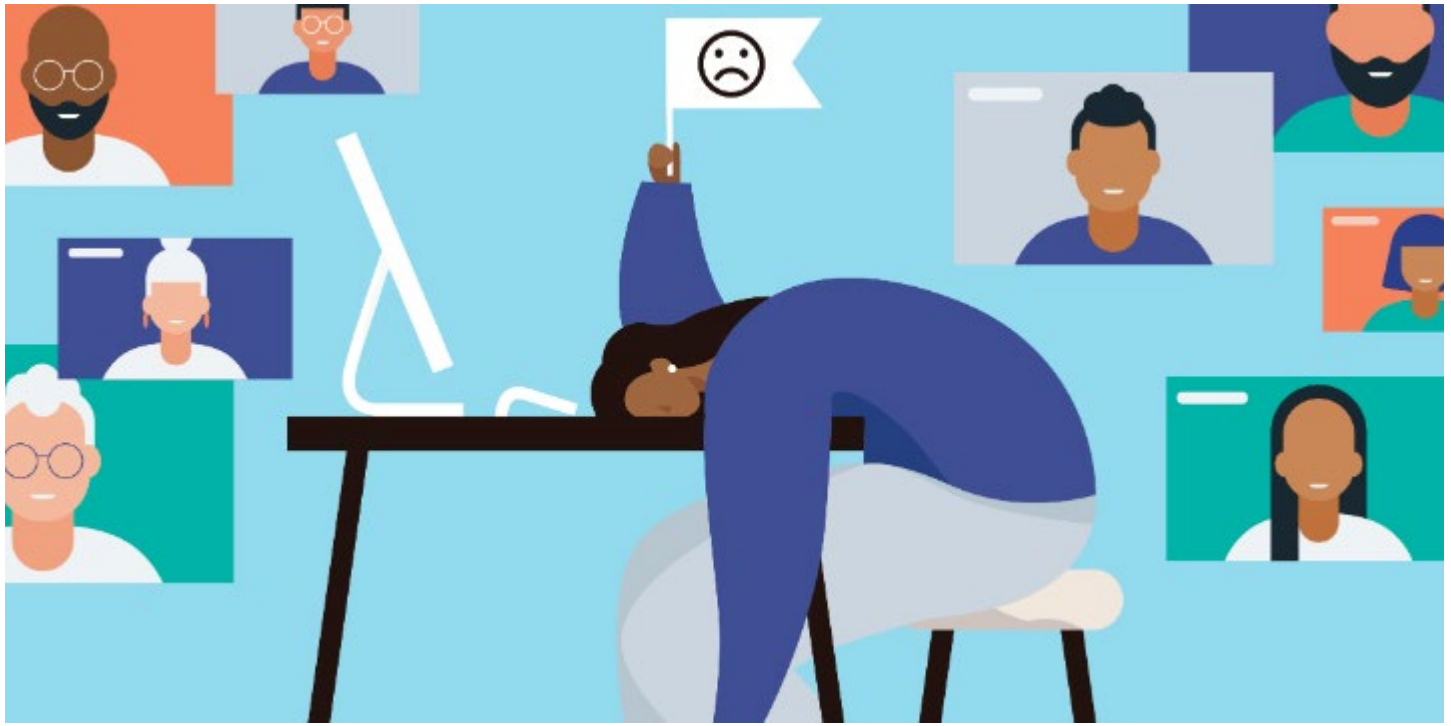
International Women's Day

Celebrate!


Robert Baumann
valeria & family
Kimberly Jones
Sharoon Qaiser
Michael Karras
BIRTHDAY
sharlisa Hutson
Kim Osborne
Zahra Haghighat
Donita Lightner
Ilan
Ana Román
Shukur Ilgar
Mauricio Villamar
Muhammad Zafar
Alejandra Stewart


Happy Birthday
Happy Birthday

Let’s Talk Resident Recruitment!



Challenges

- Would we get flooded with applications?
- How can we show candidates the personal aspects?
- Could we fill our program?

Challenges

Would we get flooded with applications?

How can we show candidates the personal aspects?

Could we fill our program?

ACGME concerned that top candidates were getting disproportionate number of interviews


zoom

Webex Meetings

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Webex Meetings

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Webex Meetings

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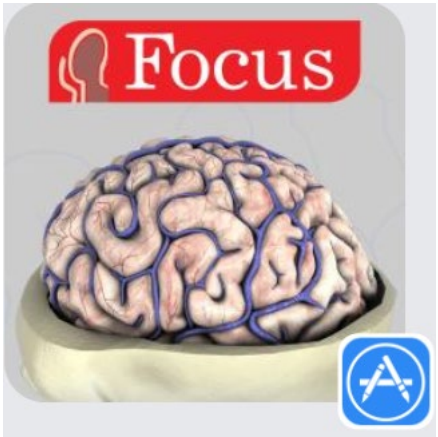
YouTube

Webex Meetings



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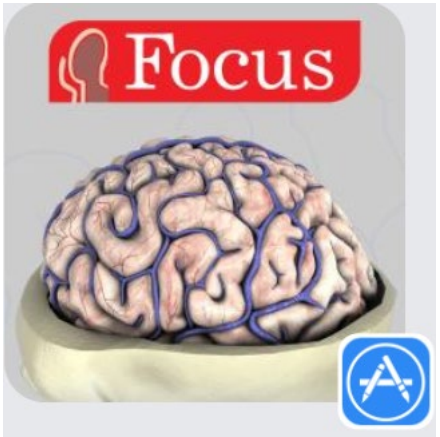
YouTube

Webex Meetings



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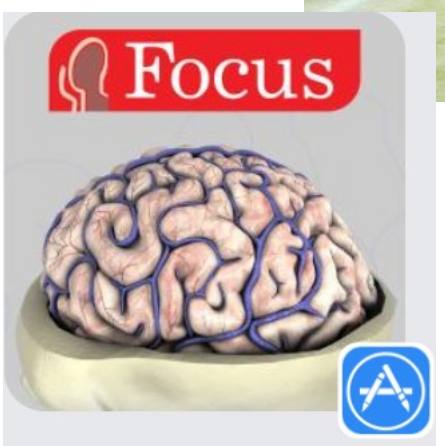
Webex Meetings



LEXINGTON IS KNOWN FOR...

AUPN

Day of the Interview

7:30 - 8:00	8:00 - 8:50	9:00 - 11:00	11:15 - 12:00	12:00 - 12:40	12:45 - 1:05	1:10 - 1:30	1:35 - 1:55	2:00 - 2:20	2:25 - 2:40	2:45 - 3:05	3:10 - 3:30	3:35 - 3:55	3:55 - 4:00
Meet with Chair	Child Neuro Conference	With Pediatrics	Meet with Program Director	Lunch	Jones	Toupin	Khan	Qaiser	Short Break	Baumann		Goldstein	Wrap-up with PD
					Toupin	Baumann	Jones	Goldstein		Khan	Qaiser		
					Khan		Qaiser	Toupin		Jones	Goldstein	Baumann	
						Goldstein	Baumann	Khan		Toupin	Jones	Qaiser	
					Baumann	Khan	Goldstein			Qaiser	Toupin	Jones	

How did we do?

Table 7A Positions Offered and Number Filled by MD Seniors and All Applicants, 2017 - 2021

Specialty	2021 Offered	2021 Filled #MD	2021 Filled #Tot	2020 Offered	2020 Filled #MD	2020 Filled #Tot	2019 Offered	2019 Filled #MD	2019 Filled #Tot	2018 Offered	2018 Filled #MD	2018 Filled #Tot	2017 Offered	2017 Filled #MD	2017 Filled #Tot
PGY-1 Positions															
Child Neurology	159	100	147	159	111	151	145	102	133	134	101	129	128	97	119
Percent filled:		92.5%			95.0%			91.7%			96.3%			93.0%	
Neurology	715	358	702	682	317	665	617	284	594	552	280	539	492	249	479
		98.2%			97.5%			96.3%			97.6%			97.4%	
GRAND TOTAL	38,106	20,226	36,179	37,256	19,924	35,258	35,185	19,622	33,417	33,167	19,634	31,899	31,757	19,343	30,478
		94.9%			94.6%			95.0%			96.2%			96.0%	

Could we fill our programs?

Virtual Interviews for the Independent Plastic Surgery Match: A Modern Convenience or a Modern Misrepresentation?

Ravinder Bamba, MD, * *Neel Bhagat, BS,*† *Phu C. Tran, MD,* * *Evan Westrick, MD,*‡ *Aladdin H. Hassanein, MDMMSc,* * *and William A. Wooden, MD**,

- More Efficient
  - Most candidates had to use vacation time for in-person interviews
  - Enormous cost reduction for candidates and residency programs
- Left Candidates less satisfied with their interview experience
  - Felt less familiar with faculty and residents
  - Candidates less comfortable ranking a program if interviewed virtually

Candidates preferred in-person interviews

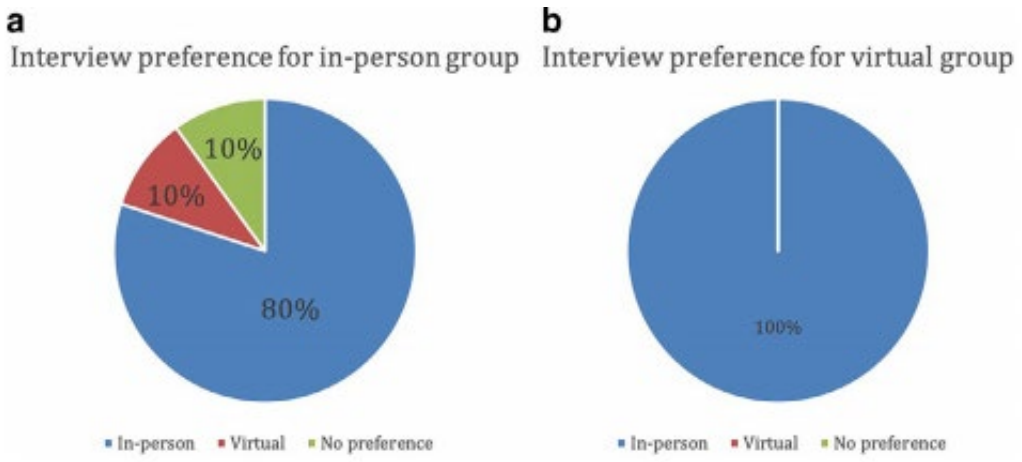
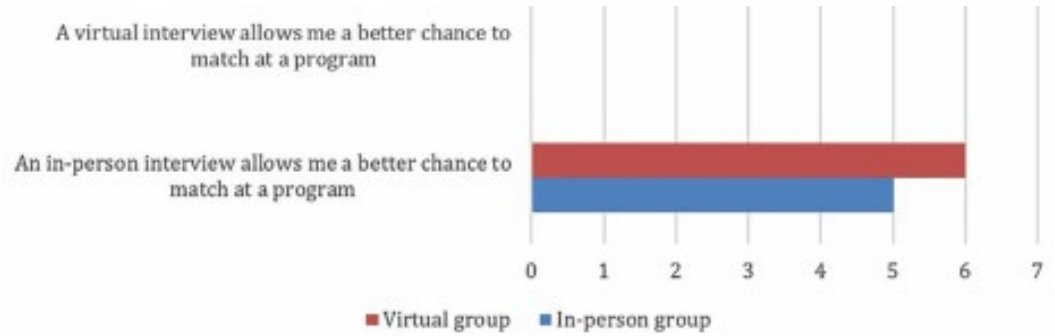


FIGURE 2. Interview preferences for (a) in-person and (b) virtual interview groups.



Perception of medical students and residents about virtual interviews for residency applications in the United States

Ali Seifi[1]*, Alireza Mirahmadizadeh[2], Vahid Eslami[3]

1 University of Texas Health at San Antonio, San Antonio, Texas, United States of America, **2** Department of Epidemiology, School of Health, Shiraz University of Medical Sciences, Shiraz, Iran, **3** Department of Neurology, University of Texas Health at San Antonio, San Antonio, Texas, United States of America

- 1171 med students and 113 residents, Surveyed from March 2019- February 2020

Concerns:

- Too much time spent away from med school for in-person residency interviews
  - average applicant commits 20 days away from medical school for residency interviews. Kerfoot et al. 2008
- Expense of travel
- Technical difficulties online

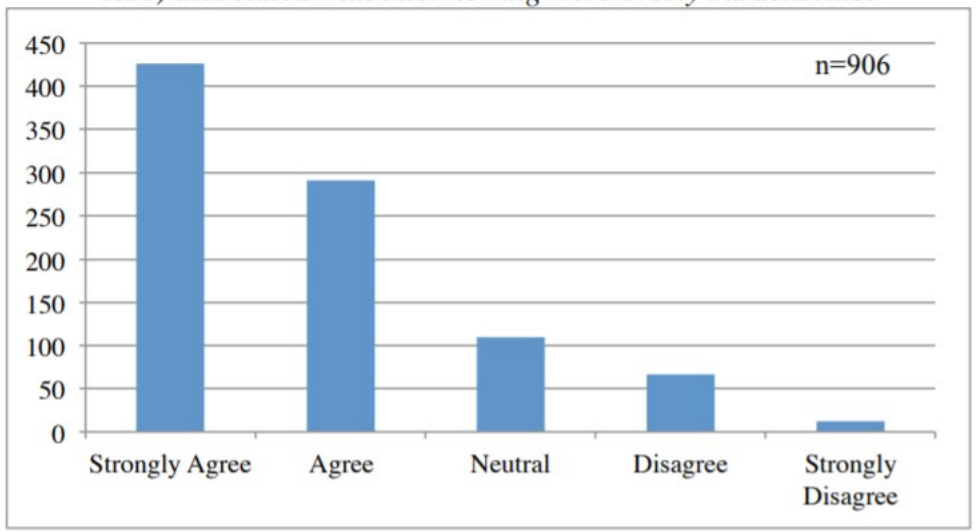
- Statements the most repeated “I think programs should offer both options of interviewing”

Conclusions

In-person interviews are favored by both medical students and residents compared to virtual-interview services in normal circumstances. However, both groups agree that programs should offer the option of having virtual-interviews as an available choice.

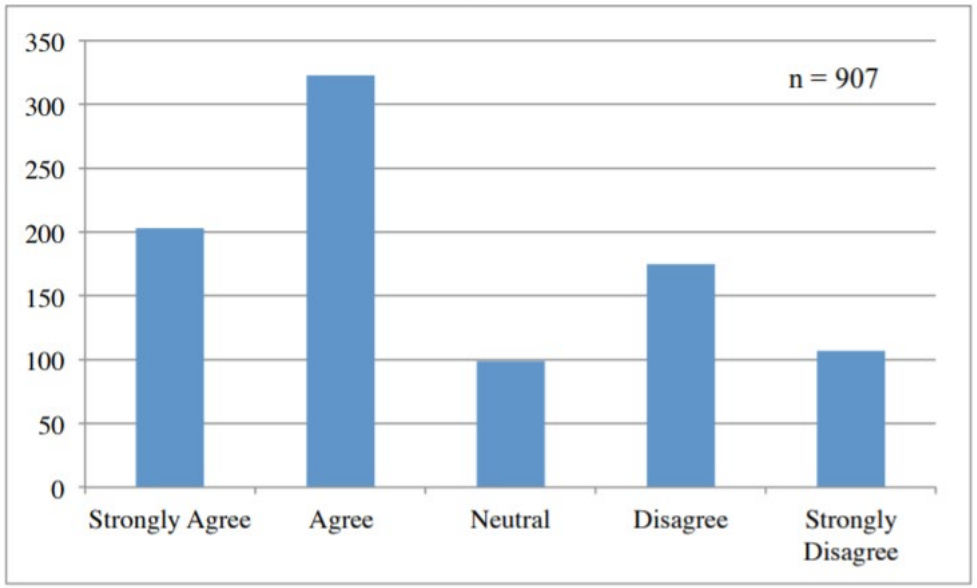
AAMC Cost of Applying to Residency, Questionnaire Report
Jessica Fred, et al. 2015 AAMC

Statement: I felt the expense of travel costs (flights, trains, buses, rental cars) associated with interviewing were overly burdensome.



79%

Statement: Financial considerations influenced my decisions to attend interviews.



58%

"The cost of applying to residency is an unnecessarily large expense in addition to the already unreasonable debt burden of medical education"

Opportunities:

Find ways to improve social experience of candidates

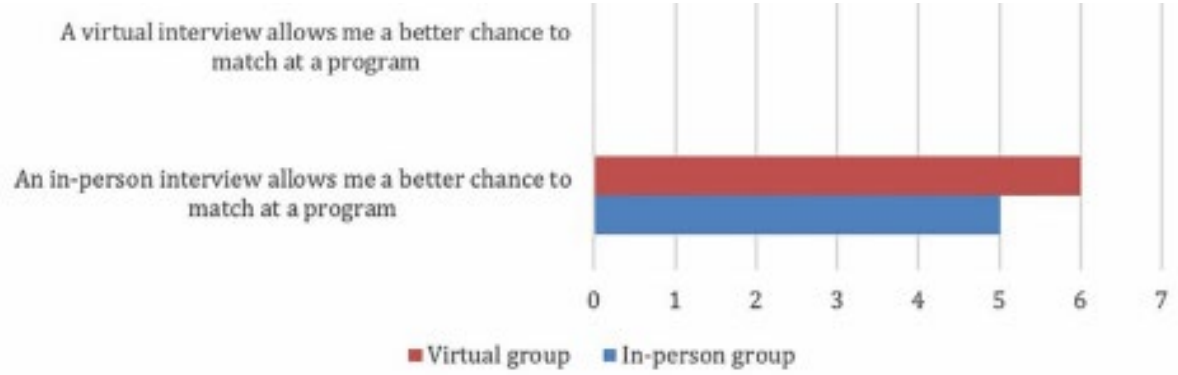
Jiang et al. Improving Virtual Open House Experience – Students most value opportunities to directly interact with residents to assess the program culture

Challenge:

How do we offer Virtual and In-Person Interview Opportunities?

Challenge

How do we offer Virtual and In-Person Interview Opportunities?



AUPN Spring Chair's Session

Challenges & Opportunities in Neurology Education in the Virtual Era

Teleneurology for the Postgraduate Neurology Trainees

Khurram Bashir, MD, MPH, FANA
Professor and Vice Chair for Education
Director, Neurology Residency Training Program
Director, Division of Neuroimmunology-Multiple Sclerosis
University of Alabama at Birmingham

Objectives

- Identify need for training of residents and fellows in teleneurology
- Review the nuts and bolts of teleneurology
- Discuss keys to success
- Discuss the future of teleneurology for current trainees

What is Telemedicine?

"Telemedicine" = "healing at a distance"

Thomas Bird in 1970's

"Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patient's health status."

American Telehealth Association

We are in the Middle of a Digital Revolution

Increase in technology use

Rising healthcare costs

Aging baby boomers

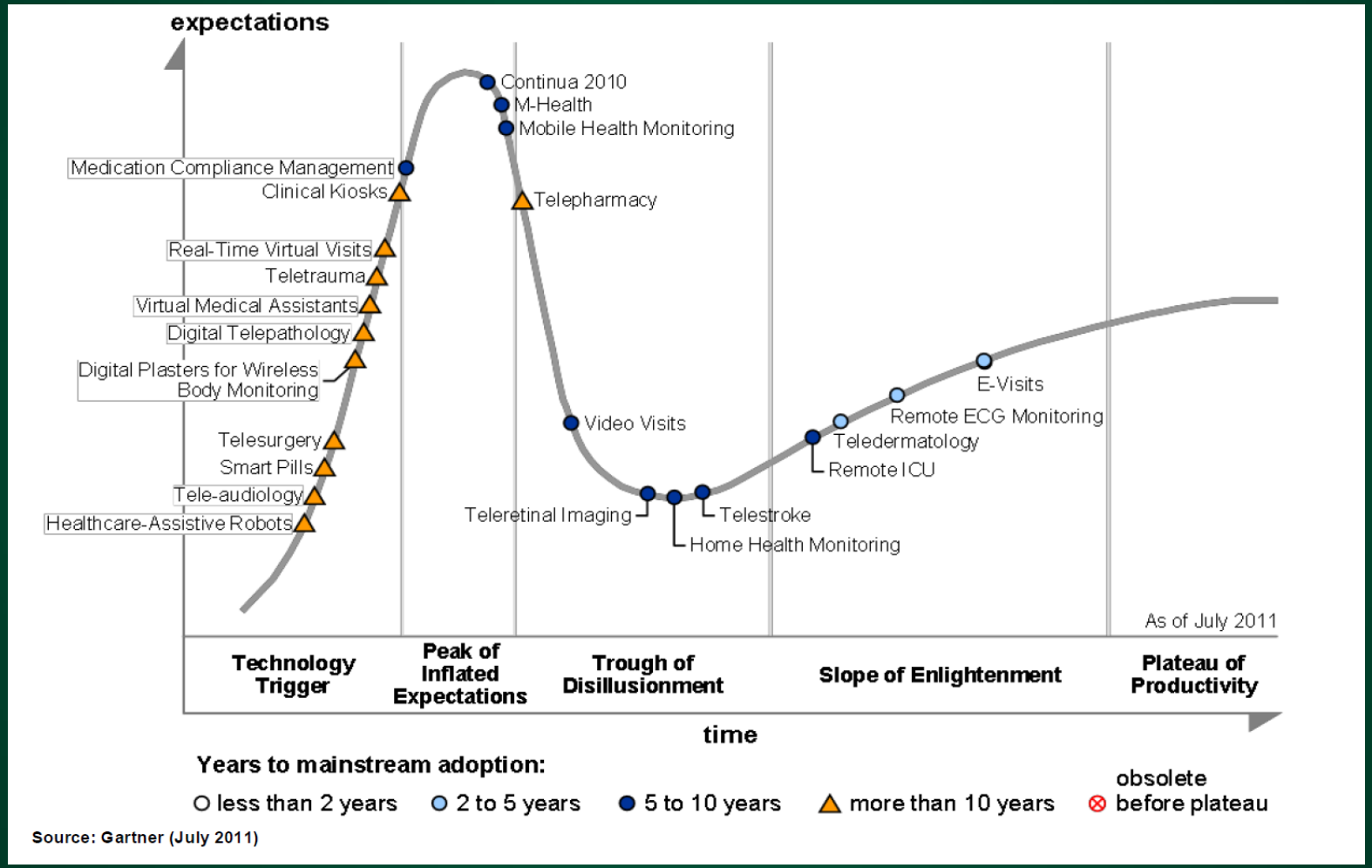
Provider shortages

Telemedicine?

Use of telecommunications technologies to provide medical information and services

- Voice
- Fax
- Mobile devices/apps (PACS/HER)
- Asynchronous (Email/Messaging)
- Synchronous (Interactive real-time audio/video streams)

Gartner's Hypecycle for Telemedicine

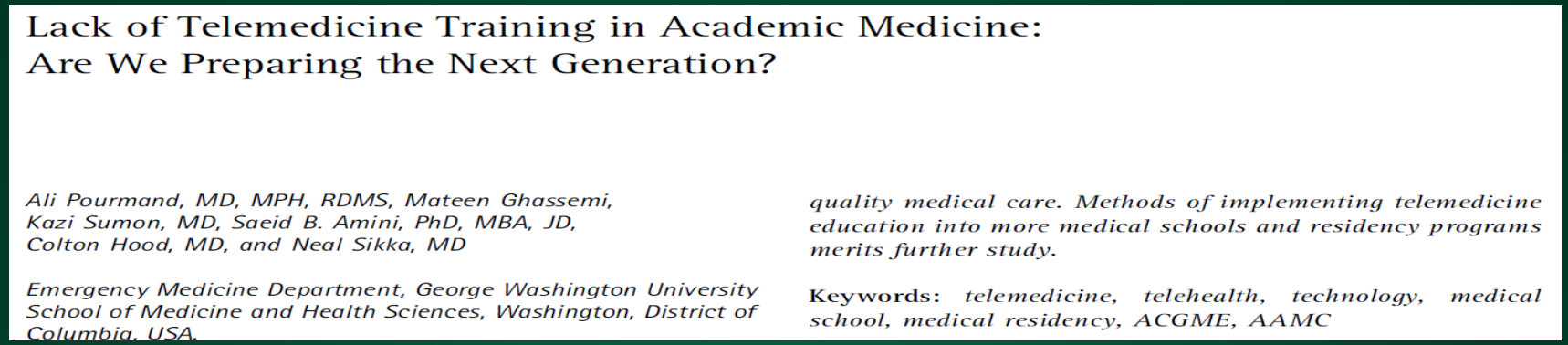


Potential Benefits of Teleneurology

- Efficient way to address neurologist shortages in remote settings/rural states
- Rapid access to subspecialist in emergency settings
- Superior quality of evaluation versus traditional telephone consults
- Possible healthcare cost savings by taking care of patients at smaller outlying hospitals and with shorter hospital stays
-
- Rapidly build a population of disease-specific patients
- Convenience for patients
- Feasible for family members to attend

Telemedicine Segmentation

- Telestroke
- Teleconsulting
- Teleneurology
- Teleradiology
- Telemonitoring / TeleEEG
- Telesurgery



Lack of Telemedicine Training in Academic Medicine:
Are We Preparing the Next Generation?

Ali Pourmand, MD, MPH, RDMS, Mateen Ghassemi, Kazi Sumon, MD, Saeid B. Amini, PhD, MBA, JD, Colton Hood, MD, and Neal Sikka, MD

Emergency Medicine Department, George Washington University School of Medicine and Health Sciences, Washington, District of Columbia, USA.

quality medical care. Methods of implementing telemedicine education into more medical schools and residency programs merits further study.

Keywords: *telemedicine, telehealth, technology, medical school, medical residency, ACGME, AAMC*

Results: From the 104 ACGME specialty milestones, only one specialty (Child and Adolescent Psychiatry) mentioned telehealth in its ACGME Milestone document. According to the AAMC data the number of medical schools surveyed increased every academic year from 140 in 2013/2014 to 147 in 2017/2018, telemedicine education in medical school increased significantly from 41% in 2013/2014 to 60% in 2017/2018 ($p = 0.0006$). However, the growth in telemedicine education plateaued from 56% in 2015/2016 to 60% in 2017/2018 ($p = 0.47$).

Conclusion: Familiarizing medical students with telemedicine is essential; the next generation of health care providers should be equipped with knowledge of telemedicine as a valuable skill to serve populations that do not have direct access to quality medical care. Methods of implementing telemedicine education into more medical schools and residency programs merits further study.

GME Teleneurology Training

"Unfortunately, teleneurology is akin to the Wild West. Many practitioners may be operating without the necessary skills and expertise to best care for patients. They're putting their patients and themselves at unnecessary risk."

Raghav Govindarajan, MD

2019

Teleneurology and COVID-19

Dr. Nasca's Letter to ACGME Community

March 2020

Many institutions are deploying telemedicine to continue to care for patients but avoid having them leave home and be at risk for infection. The ACGME has accelerated the use of the Common Program Requirements for supervision of telemedicine visits carried out by residents and fellows, originally scheduled to go into effect July 1, 2020. Instead, effective immediately, the ACGME will permit residents/fellows to participate in the use of telemedicine to care for patients affected by the pandemic.

The definition of Direct Supervision as part of these new telemedicine requirements includes the following classification: "the supervising physician and/or patient is not physically present with the resident and the supervising physician is concurrently monitoring the patient care through appropriate telecommunication technology."

Ultimately each specialty Review Committee will choose whether to continue to allow for this type of direct supervision with telemedicine in other situations. In no situation will a program be penalized retroactively for appropriate engagement of residents and fellows with appropriate supervision in the use of telemedicine during this crisis.

ACGME Common Program Requirements

The definition of Direct Supervision as part of these new telemedicine requirements includes the following classification: “the supervising physician and/or patient is not physically present with the resident and the supervising physician is concurrently monitoring the patient care through appropriate telecommunication technology.”

ACGME Core Program Requirements
(Neurology RC)

VI.A.2.b) Supervision may be exercised through a variety of methods. 1577 For many aspects of patient care, the supervising physician may be a more advanced resident or fellow. Other portions of care provided by the resident can be adequately supervised by the appropriate availability of the supervising faculty member, fellow, or senior resident physician, either on site or by means of telecommunication technology. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of resident-delivered care with feedback.

GME Teleneurology Training

Prerequisites for Training Residents/Fellow

- Faculty training
- Review EMR access, documentation, downtime protocols
- Review and update site capabilities, transfer patterns and communication pathways
- Call center training

CONTEMPORARY ISSUES

Developing an outline for teleneurology curriculum

AAN Telemedicine Work Group recommendations

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ABSTRACT

The emerging field of teleneurology is delivering quality care to neurologic patients in increasingly numerous technologies and configurations. Teleneurology is well-positioned to address many of the logistical issues neurologists and their patients encounter today. However, formalized medical training has not caught up with this developing field, and there is a lack of formal education concentrating on the specific opportunities and challenges of teleneurology. Considering this, the American Academy of Neurology Telemedicine Work Group identified equivalencies with which any practitioner of teleneurology should be familiar. The purpose of this curriculum is not to define teleneurology or mandate where its use is appropriate, but rather to provide guidance on basic equivalencies that students, residents, and practitioners should know while practicing teleneurology. Comprehensive training in clinical bedside neurology is necessary to safely practice teleneurology and the components of this curriculum are an extension of that training. In this article, we offer a detailed discussion on the rationale for the contents of this curriculum and conclude by providing a model curriculum and an outline for evaluating residents in teleneurology.

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GME Teleneurology Training

Health professionals can deliver quality neurological care remotely to patients through the emerging field of teleneurology. However, medical training has not caught up with the field, and formalized education for teleneurology is needed.

An AAN workgroup comprised of 12 specialists developed a curriculum to train students, resident physicians, fellows, faculty and other health care providers in both academic medicine and private practice.

The curriculum has been endorsed by the American Telemedicine Association.

The team identified five main areas that providers need to understand before practicing teleneurology.

GME Teleneurology Training

Introduction to technology, basic implementation and limitations:

Objectives

- A strong foundation of technical knowledge is essential for safe and effective care
- The provider must be comfortable with using technology to review the patient's medical records, move cameras and perform other functions
- Health professionals must be able to troubleshoot technological issues that arise

Training

- Appropriate use of teleneurology for patient care
- Various types of teleneurology applications
- Potential advantages and disadvantages of implementing teleneurology into academic or private practice
- Technical overview of teleneurology visits (inpatient and outpatient)
- Best practices for virtual neurological examination

GME Teleneurology Training

Licensure, medicolegal issues and ethics:

Objectives

- Licensing requirements vary from state to state and are continuously evolving
- Neurologists must have a foundational understanding of these requirements to avoid potential legal ramifications

Training

- State specific licensing requirements
- State specific insurance coverage and reimbursement issues for teleneurology services
- Caveats regarding malpractice and documentation

GME Teleneurology Training

"Webside" manners:

Objectives

- Developing a provider-patient relationship is an important part of the healing process in face-to-face visits. A video screen and camera can make this difficult, and providers must overcome this barrier to connect with their patients

Training

- Keys to creating a professional and welcoming environment during virtual visits
- Principles of good "webside manner"

GME Teleneurology Training

Informed consent, patient privacy and disclosure:

Objectives

- Neurologists must be trained to inform their patients of the security of their personal data in accordance with HIPPA and the HITECH Act

Training

- Obtaining and verifying consent for teleneurology services
- Information to be disclosed to the patient (FSMB Model Policy for the Appropriate Use of Telemedicine Technologies in the Practice of Medicine)
- How to ensure patient privacy during televisits

GME Teleneurology Training

Neurology-specific clinical skills:

Objectives

- Patients must receive the same standard of care that they would with an in-person provider.
- The provider must discuss expectations with the patient to ensure their health concerns can be properly addressed.

Training

- Appropriate virtual neurological history taking techniques
- Best practices for virtual neurological examination

Developing an outline for teleneurology curriculum

AAN Telemedicine Work Group recommendations

Table 1 Model curriculum and suggested evaluation of equivalencies

Timeline	Didactics	Type of evaluation
Module 1 (estimated time: 2 hours)	Knowledge	Vignette-based multiple-choice questions and journal club
	Technological aspects of teleneurology, basic implementation, and limitations	
Module 2 (estimated time: 1 hour)	Licensure and medicolegal issues and ethics	Vignette-based multiple-choice questions and journal club
Module 3 (estimated time: 4 hours)	Attitudes	Case-based simulations/OSCE, 360-degree evaluation including telementoring and journal club
	Provider–patient relationship, professionalism, and webside manners	
Module 4 (estimated time: 1 hour)	Informed consent and patient privacy	Case-based simulation/OSCE, 360-degree evaluation, journal club, and vignette-based multiple-choice questions
		Option of self-reflection essay on the future role of teleneurology at the end of the training modules
Module 5 (estimated time: 4 hours)	Skills	360-degree evaluation including telementoring, OSCE, and journal club
	History, examination, and documentation in teleneurology	

Abbreviation: OSCE = objective structured clinical examination.

GME Teleneurology Training

Resident Evaluation

1. Direct supervision of the resident's teleneurology history and examination skills
2. Case simulation to assess webside manners
3. Objective structured clinical evaluation of different teleneurology cases
4. 10–20 clinical vignettes with multiple-choice questions to assess resident's knowledge in technology, medicolegal issues, and professional/ethical standards
5. Self-reflection essay on the future role of teleneurology in the trainee's practice or journal club discussion on teleneurology 360-degree evaluations (where attending, patients, peers, and allied health care professionals assess the residents and residents assess themselves as well as evaluate the rotation) are ideal for the improvement of teleneurology rotations

What would it take to Improve/Maintain Quality and Efficiency

- **Build an experienced and dedicated team**
  - Neurologists
  - Trainees
  - Program manager
  - Smaller core team
- **Streamline and simplify protocols and procedures**
  - Technology
  - Minimize changes to work flow for on the ground personnel
  - Communication back to referring physician
- **Provide prompt feedback**
- **Strategic/calculated growth**
- **Re-evaluate goals of teleneurology network**
- **Develop relationship with the technology vendor**

Teleneurology Challenges

- Technology limitations such as bandwidth and difficult-to-use, unreliable video conferencing services
- Reimbursement issues with telemedicine, especially for Medicare and Medicaid
- Liability and licensing is an issue because physicians only licensed within a state can only help people in that state
- Stakeholder buy-in, particularly among patients but also doctors and nurses

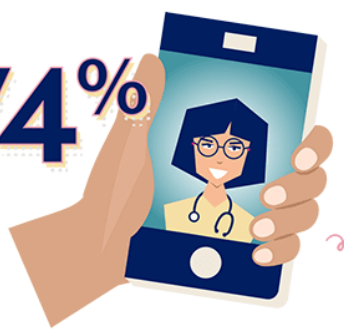
Future Opportunities for Teleneurology

- **Outpatient teleneurology visits**

  - Seizure management
  - Dementia care
  - Post stroke follow up
  - In Home Rehabilitation
  - Lower costs (less overhead), decrease clinic no-show rates, increase compliance
  - Follow patients in their homes/communities

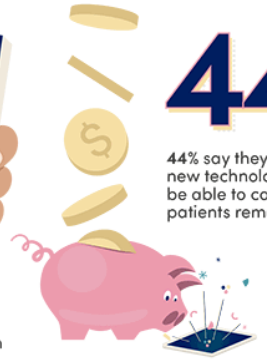
Telehealth is here to stay

COVID-19 sparked a long-overdue telehealth revolution. Telehealth enables patients to receive care from home, increasing speed, convenience, and access.



74%

74% of providers say their organization has increased their use of telehealth services due to COVID-19.[6]



44%

44% say they have invested in new technology solutions to be able to communicate with patients remotely.[6]

The overwhelming majority (**83%**) of patients say they are likely to continue using telemedicine once the pandemic has ended.[8]

83%

Through telehealth solutions, clinics have achieved cost savings of **$19–$121** per visit.[7]

$19–121

THANK YOU