

Asano–Gonnella Center for Research in Medical Education & Health Care

Annual Report • 2022 — 2023



Asano-Gonnella Center for Research in Medical Education and Health Care

Annual Report
Academic Year 2022-2023

**Sidney Kimmel Medical College at
Thomas Jefferson University**

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Message from the Director

With mixed emotions, the Asano-Gonnella Center for Research in Medical Education and Health Care celebrated the retirement of Dr. Joseph Gonnella, the founder of the Center and Dean Emeritus of the medical college. Dr. Gonnella has significantly transformed the way we educate the next generation of healthcare professionals and enhance patient care. He has increased Jefferson's reputation, as well as the academic and clinical footprint in medicine by establishing the Jefferson Longitudinal Study of Medical Education over 50 years ago that has been lauded by the AAMC and Academic Medicine as the prototype for forward-thinking medical education, programmatic evaluation, and landmark assessment tools; expanding our global reach by creating partners worldwide, including Italy, Japan, Portugal, and Korea; launching Jefferson's cancer center, which is now the NCI designated Sidney Kimmel Cancer Center; establishing the Joseph S. Gonnella, MD Scholarship Fund that has helped remove financial barriers to a medical education; and inspiring benefactors to set up The Distinguished Joseph S. Gonnella, MD Lectureship for Excellence and Innovation in Medical Education. It is no surprise that his impact has culminated in countless honors and awards, most notably: Honorary degrees in over 5 countries; Presidential medals and citations from 3 countries; Induction to the National Academy of Medicine in 4 countries; and the coveted Abraham Flexner Award from the Association of American Medical Colleges. In addition, we need to celebrate Phyllis Accetta's retirement who has been instrumental in the Center's operation.

The Center has had another productive and impactful year, serving the medical college and scholars at Jefferson and around the world. It launched the Division of Qualitative & Mixed Methods, naming Dr. Rosie Frasso as the Director. The Jefferson Scale of Empathy (JSE), under the stewardship of Dr. Mohammadreza Hojat, has been used by over 2,000 researchers in over 90 countries around the world, with translation into 59 languages and citations and used in more than 500 peer-reviewed publications.

It is also worth noting that Dr. Vittorio Maio was named the Jefferson recipient of the Erasmus+ for Higher Education grant funded by the EU Program. And, the Noguchi Medical Research Institute has pledged \$1 million to support medical education and international exchange activities.

Respectfully submitted,

Charles A. Pohl, MD

Overview

The Asano-Gonnella Center for Research in Medical Education and Health Care provides technical support to the faculty in evaluating the knowledge, skills, and professionalism of students throughout the MD curriculum. The Center provides information to the administration concerning the metrics used to evaluate the effectiveness of policies related to admissions, curriculum, and students' academic progress. Center faculty undertake medical education research focusing on the assessments of educational and patient outcomes, professionalism, and the improvement of educational tools. Information about students future plans, attitudes, personal qualities, their assessments of medical education at Sidney Kimmel Medical College (using on-line surveys), and ratings of clinical competence given by directors of their residency programs (at the completion of the first residency year) is collected annually as part of the well-known Jefferson Longitudinal Study of Medical Education. In addition, Center faculty conduct research and scholarly activities in collaboration with clinical and non-clinical Thomas Jefferson University faculty to identify and address health disparities. These quantitative, qualitative and mixed-methods collaborations are disseminated in peer-reviewed journals and at scientific meetings, nationally and internationally. The Center continues to receive external support for medical education research, as well as health services, and policy related research.

Medical Education

As of September 2023, the Jefferson Longitudinal Study database comprises academic and career outcome data for 14,165 Sidney Kimmel Medical Center students and graduates since the entering class of 1964. (Figure 1, schematic of the Longitudinal

Study.)

This database provides the College with vital information about intermediate and long-term curricular outcomes. For example, Exhibits 1-21 show an overview of medical education outcomes that we annually report by retrieving data from the Jefferson Longitudinal Study.

Exhibits 1-9 display information about our students before they enter medical school. Exhibits 10-14 show performance indicators during medical school and on national medical examinations, global ratings of clinical competence in core clerkships (Exhibit 10); comparisons of pass rates with those of all U.S. medical schools on the United States Medical Licensing Examinations (USMLE) (Exhibit 11); graduates' level of satisfaction with each year of medical school education (Exhibit 12); satisfaction with medical education as to preparing graduates for careers in medicine (Exhibit 13); and the pattern of on-time graduation, delayed graduation, transfer, and attrition (Exhibit 14).

Exhibits 15-19 include data collected after medical school, such as geographic location of first year residency training programs (Exhibit 15). Global ratings in four areas of clinical competence, provided by the residency program directors, using our Postgraduate Rating Form for those graduates who granted us permission to collect such data are displayed in Exhibit 16. (For reference, a copy of the Postgraduate Rating Form is included at the end of this report.)

Program directors' ratings of graduates' ability to perform three roles of physicians (clinicians, patient educators, and health care resource managers) are depicted in Exhibit 17, and program directors' confirmation that the resident has qualities desirable in their own personal physicians is shown in Exhibit 18. Exhibit 19 displays the

specialties of our graduates over three time periods. Board certification rates of our graduates by periods of graduation are shown in Exhibit 20. Also shown are current geographic locations of our living graduates in 2020 (Exhibit 21).

A total of 213 research studies based on the Jefferson Longitudinal Study have been published in peer-reviewed journals. A list of publications is available on our website: https://www.jefferson.edu/content/dam/academic/skmc/crmehc/8.27.21_Peer-Reviewed.PubsfromtheJLS.pdf

Medical Education Research

Specific projects include:

- Dr. Douglas initiated research on the assessment of medical professionalism that has culminated in publication of a book chapter titled, *“The need for a common set of competencies as components of a medical professionalism construct, paired with a common program of assessment.”* The chapter features an extensive literature review on the progress so far achieved for medical professionalism assessment, as well as a proposal for a common (specialty-specific) assessment strategy that would be governed by a commonly agreed to definition for a medical professionalism construct, specialty-specific content standards that should be assessed, and specialty-specific performance standards. The chapter was published in: Ćurković, M., Borovečki, A. (eds) *The Bridge Between Bioethics and Medical Practice*. The International Library of Bioethics, Vol. 98. Springer, Cham. October 2022 https://link.springer.com/chapter/10.1007/978-3-031-09733-1_3.
- In a collaborative study with our Admissions Office, Center faculty examined predictive validity of the new MCAT sections’ scores for predicting

performance on the United States Medical Licensing Examinations (Steps 1, 2, and 3) as the criterion measures, and compared predictive validity coefficients of the new MCAT with those from the previous version of the MCAT. A manuscript is being prepared for publication on this project’s findings.

- Center faculty played a leading role on the Disability Taskforce, which was chaired by Dr. Nethra Ankam and co-chaired by Dr. Michael Mallow. The purpose of the Disability Taskforce was to identify opportunities for formal integration of training and assessment on providing healthcare for patients with disabilities within the JeffMD curriculum, as well as to provide workable and relevant recommendations to the JeffMD Curriculum Committee. This taskforce featured a collaboration among the Center, Office of Assessment, Curriculum Committee faculty, and students to identify ableism, remove ableist language, and enhance education vignettes deployed in the case-based-learning (CBL) arm of the curriculum. The study, entitled “Exposing the disability-related hidden curriculum in case-based learning: A qualitative study” was published in the *Disability and Health Journal*.
- Center faculty has worked on the assessment of the impact of the JeffMD curriculum on student empathy and other non-cognitive variables, including reports on differences between four entering classes at pre-matriculation and at the start of clinical clerkships. This assessment will continue next year with the incoming class of JeffMD students.
- Center faculty produced the annual report on students’ class positions for consideration for Alpha Omega Alpha eligibility for the senior year, as well as students’ class positions that are included for the Medical Student

Performance Evaluation (MSPE).

- Center faculty produced bar graphs for the Medical Student Performance Evaluation reports that display students' performance in the core clinical clerkships.
- Center faculty worked on the annual report on the Matchmaker Program for the Office of Student Affairs. The Office of Student Affairs uses the annual Matchmaker report to counsel students about residency selection.
- The Center has changed the administration of the Center's Postgraduate Year One (PGY1) rating form from postal delivery and postal submission of the paper-and-pencil version to online administration and online submission of an online version. Center faculty is working on a study to compare response rates of the different approaches for the administration of the PGY1 rating form (i.e., mailing hard copies versus on-line). Data collected for this project will be used to evaluate the impact of online administration on response rates and is intended to lead to publication in a peer-reviewed journal.
- The Center is providing the Sidney Kimmel Medical Center Student Assessment Office assistance on research intended to investigate associations between student academic performance during medical school and Accreditation Council for Graduate Medical Education (ACGME) milestone evaluations during the first year of residency. A significant amount of data for this investigation comes from the Jefferson Longitudinal Study. The remaining data will come from ACGME. This national project is a collaborative effort between ACGME and several medical schools in the United States. As a subsequent local activity for this project, there is a focused collaboration between ACGME and Sidney Kimmel

Medical College individually for the purpose of conducting outcome assessment and research, and the Center is helping the medical college with this activity as well. Sidney Kimmel Medical College's efforts for this project are being funded by the Stemmler Grant that was awarded in the spring of 2022.

- During December of 2022 and January 2023, the Center provided support to the Student Assessment Office for preparing portions of Sidney Kimmel Medical College's submission to the Liaison Committee on Medical Education (LCME) for the 2023 LCME site visit. The Center conducted statistical analyses; provided JLS and NBME shelf-exam data, as well as technical recommendations, to the Office of Student Assessment for this effort.

Empathy Research

The Jefferson Scale of Empathy (JSE) continues to receive broad national and international attention. The JSE has been translated into 59 languages and used in 90 countries. Worldwide use of the JSE and translations are shown in Figure 2. The number of requests for permission to use the JSE by national and international researchers has been very strong over time (shown in Figure 3). In addition to 62 articles published by Hojat et al.: https://www.jefferson.edu/content/dam/academic/skmc/crmehc/Bibliography_Hojat%20et%20al_9.5.2023.pdf, publications by national and international researchers appeared in peer-reviewed journals (in English) in which the JSE was used. Over 520 articles are listed at the following link: https://www.jefferson.edu/content/dam/academic/skmc/crmehc/Bibliography_Natl-Intl%20researchers_4.20.2023.pdf

Dr. Hojat currently is working on the third edition of his empathy book under a new title: "*Clinical Empathy*" which is an expanded and updated edition of his 2016

book. The new edition is scheduled to be released by Springer in 2024.

Health Services Research

Center researchers worked on a major series of projects being performed in collaboration with Thomas Jefferson University faculty, as well as external institutions and healthcare organizations.

Funded by the Parma Local Health Authority, we have designed, developed, and implemented a multi-year project aimed at improving the appropriateness of medication prescribing for the elderly patients. This project has led in 2007 to the development with the help of a panel of experts of the first Italian explicit list of potentially inappropriate medications (PIMs) known in the literature as the *Maio criteria*. The Maio criteria have been updated four times, in 2011, in 2014, in 2017, and in 2020. The 2020 Maio criteria can be retrieved at the following URL: https://www.ausl.pr.it/azienda/elenco_farmaci/lista.aspx. We have demonstrated with several publications that this multi-year project initiative produced a large reduction in PIM exposure, which was sustained even after its termination. With this in mind, the Parma Local Health Authority asked Center researchers to design and implement an educational training for their about 300 primary care physicians to increase their awareness of the importance of appropriate prescribing for the elderly and of the 2020 Maio criteria in order to ameliorate their medication decision process and improve the quality of care and outcomes of their patients.

Center researchers have an ongoing collaboration with the College of Nursing on a funded research project looking at the impact of the COVID-19 pandemic on infection prevention and control departments, including staffing and

resources. (PITA study. Agency for Healthcare Research and Quality: Award n. 1R01HS029023-01. PI: Monika Pogorzelska-Maziarz, PhD). A commentary on this issue has been accepted for publication in *American Journal of Medical Quality*.

In collaboration with the Sidney Kimmel Cancer Center Jefferson Health, we have investigated the impact on the Center for Medicare & Medicaid Innovation's Oncology Care Model on hematologic malignancy target price. Results of this study were presented at the 2022 ASCO Quality Care Symposium and then recently accepted for publication in the *American Journal of Medical Quality*.

Centers researchers have begun a collaboration with the Kidney Transplant Program, Sidney Kimmel Medical College, looking at the relationship between age of recipients and characteristics of donors, and patient survival, graft survival, and transplant-related healthcare resource utilization. Preliminary findings have been presented at the 2023 American Transplant Congress and the 2023 International Society for Pharmacoeconomics and Outcomes Research Annual International Meeting.

In collaboration with the Department of Radiation Oncology we have initiated a large population-based study using SEER-Medicare data looking at metabolic comorbidities, namely obesity, diabetes and hyperlipidemia, as well as medications against hyperglycemia and hyperlipidemia and the potential for a prognostic role in central nervous system benign and malignant tumors.

A collaborative research initiative has started with the Department of Urology to conduct a comparative analysis of robotic-assisted laparoscopic vs laparoscopic radical nephrectomy in renal cancer patients.

Center researchers have collaborated with the Greater Philadelphia Business Coalition on Health to investigate healthcare resource utilization in a variety of diseases, including

migraine, congestive heart failure, and diabetes. Preliminary findings have been presented at 2023 AMCP Annual Meeting and the 2023 International Society for Pharmacoeconomics and Outcomes Research Annual International Meeting. In collaboration with the University of Turin, Italy, and the University of Tor Vergata, Rome, Italy, Center researchers have published a book chapter on population health management as a tool of healthcare governance in outpatient setting.

Qualitative and Mixed Methods

Center faculty work with scholars, clinicians and educators to incorporate mixed-methods and qualitative approaches into new and ongoing projects. The goal is to amplify the voices of patients, learners, and community members and augment quantitative findings.

Rigorous qualitative and mixed methods research add valuable context to the work we do in the center. In an effort to more thoroughly explore research questions in the medical education and healthcare space we recently expanded our team to include Dr. Rosie Frasso. Dr. Frasso has over 20 years of experience as a mixed methodologist and has trained hundreds of students, faculty members and researchers interested in exploring data that explains the “numbers”. Her expertise in qualitative methods focuses on traditional and alternative data sources and data collection approaches that are crucial to studies designed to inform, assess, and evaluate medical education and shed light on healthcare disparities. Dr. Frasso embraces traditional and creative data collection approaches, including, but not limited to, arts informed research, tag-a-long interviews, photo-elicitation interviews, photo-voice, freelisting and consensus-deriving group approaches.

Additionally, she has worked on several cross-disciplinary projects with educators, nurses, psychologist, physicians, artists, and economists who are committed to using qualitative methods to support and enhance community collaborations and to amplify the voices of vulnerable populations.

Dr. Frasso is involved in multiple projects with faculty from across the enterprise. She works closely with researchers and clinicians on projects designed to improve the patient experience. For example, Dr. Frasso collaborates with Dr. Paul Chung, a urologist caring for patients who are members of the LGBTQ+ community. Together they have completed several mixed-methods projects that have led to interventions to address bias in the provision of care to patients. These collaborations have led to several publications in surgical journals.

Additionally, Dr. Frasso has worked with Drs. Fernandez, Papanagnou, Troung, and Ankam on projects designed to qualitatively explore, identify, and remove ableist and biased language in the patient scenarios used in Case Based Learning (CBL). The findings and approach have been presented at multiple meetings and one paper has already been published and a second is in development.

Dr. Frasso has ongoing collaborations with clinicians across Jefferson and with providers from Wills Eye, Nemours, and the Children’s Hospital of Philadelphia.

Teaching

Center Faculty teach a series of lectures in the phase one curriculum. Including lectures on the Social Determinants of Health (SDOH), Public Health, and Research Design. Additionally, center faculty collaborate with the Megan Voeller, Sidney Kimmel Medical College, to run the Community Voices Series and accompanying

journal club for students. The series provides student the opportunity to explore the SDOH with the help of community members who are experts by experience, that is people living with SUD, housing and food insecurity, have experienced racism and transphobia in the health system. Center faculty have served as guest lecturers at Catholic University in Rome, the University of Pisa, the University of Parma, Italy, Ulster University in Northern Ireland, and a host of other regional and national venues including the Philadelphia Federal Reserve Bank and the Chicago Federal Reserve Bank, where they are embarking on a host of mixed methods projects to address the social determinants of health. Center faculty have also collaborated with Dr. Richard Derman, Associate Provost for Global Affairs at Thomas Jefferson University, to provide training for students visiting from KLE University in Belagavi, India. Additionally, Center faculty direct “The Qualitative Institute,” (TQI) a 3-day mini course focused on providing training to those in health services and medical education research. Approximately 75 researchers and students attend each year. Center faculty worked with students to create and deliver a 3-part workshop on addressing the social determinants of health, health literacy and motivational interviewing to the Jefferson’s 22-23 cohort of Community Health Workers.

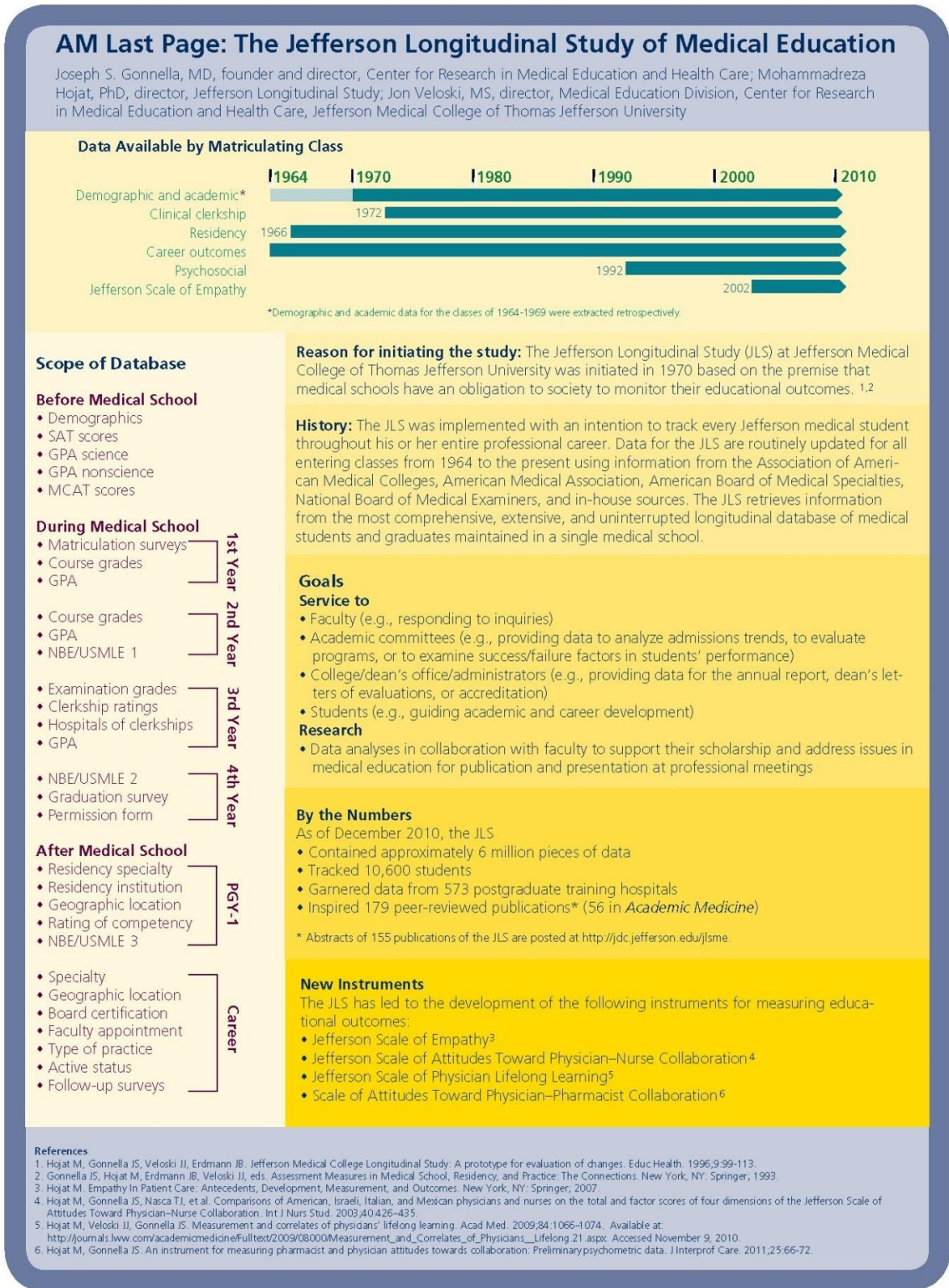
Mentorship

The Center continues providing opportunities for Jefferson students to increase and expand their knowledge and skills in health services research and expose students to rigorous research designs, that include quantitative, qualitative and mixed methods approaches. Adaeze Amaefule, Alexander Litvintchouk, Phuong Phan, and Carolyn Saba first year Health Economics and Outcomes Research Fellows in the Jefferson College of Population Health, have worked with Center faculty on several research studies. In addition, Center faculty

have worked with several PhD in Population Health students on their dissertations, as well as with students in the Master of Public Health (MPH) program, the MD-MPH program and students in nursing, PA studies, and Applied Health Economic and Outcomes Research programs on a variety of capstone projects focus on health services, patient experiences and health disparities.

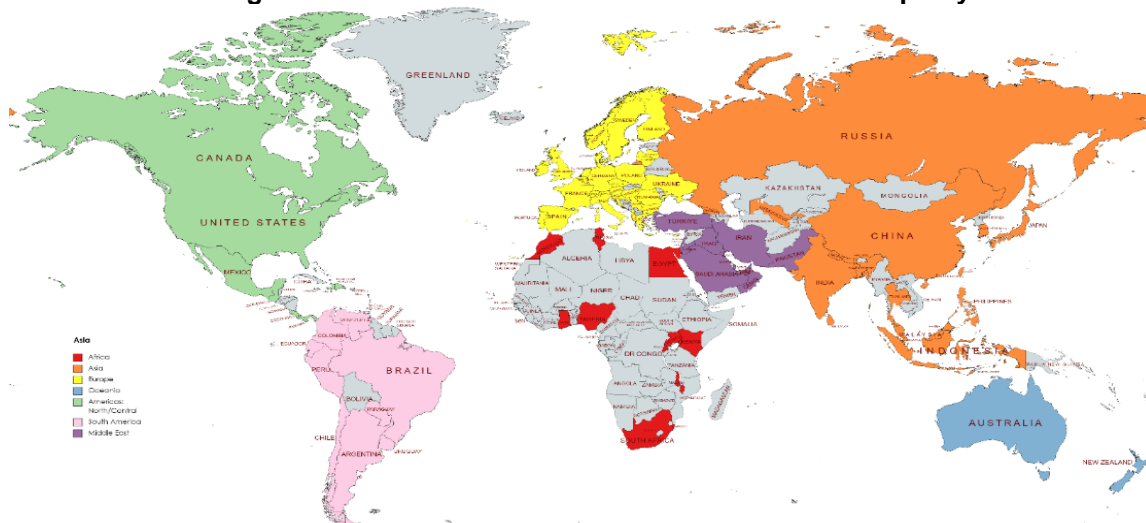
With the goal of supporting international education at Jefferson, through a partnership with Catholic University of the Sacred Heart, Rome, Italy, Dr. Maio was named the Jefferson recipient of an Erasmus+ for Higher Education grant funded by the EU Program. The grant supports an education and training exchange program between faculty and students for our institution and Catholic University in Rome.

Figure 1



Gonnella JS, Hojat, M, Veloski, J. AM Last Page: The Jefferson Longitudinal Study of Medical Education. *Acad. Med.* 86(3):404, March 2011. Reprinted with permission by *Academic Medicine*.

Figure 2: Worldwide Use of the Jefferson Scale of Empathy

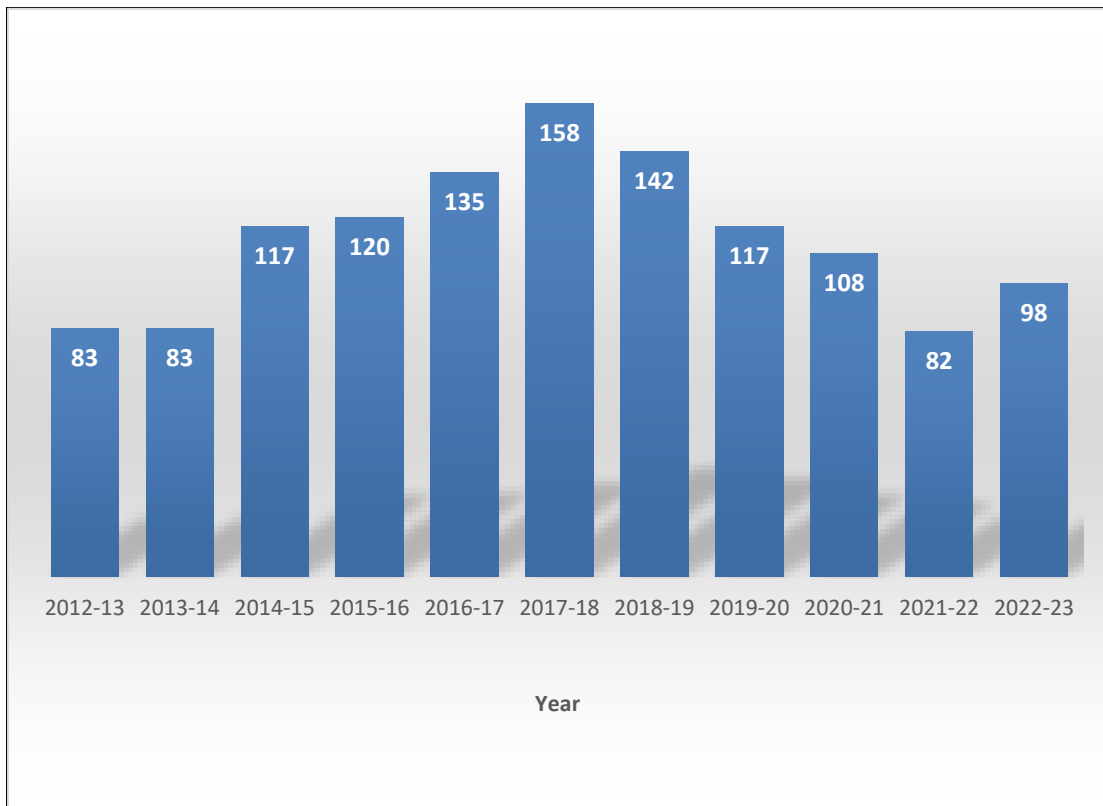


Africa: Egypt Ghana Kenya Malawi Nigeria Rwanda South Africa Tunisia Uganda	Philippines Russia Singapore South Korea Sri Lanka Taiwan Thailand Uzbekistan	Germany Greece Hungary Ireland Italy Latvia Lithuania Norway Poland Portugal Romania Scotland Serbia Slovenia Spain Sweden Switzerland The Netherlands	United Kingdom Middle East: Iran Iraq Israel Jordan Kuwait Oman Lebanon Pakistan Qatar Saudi Arabia Turkey United Arab Emirates Oceania: Australia New Zealand Americas: North/Central	Canada Costa Rica Guatemala Dominican Republic Haiti Mexico Panama St. Maarten Trinidad & Tobago United States South America: Argentina Brazil Chile Columbia Ecuador Paraguay Peru Uruguay Venezuela
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Translations of the Jefferson Scale of Empathy				
Albanian	Dutch	Hebrew	Portugal	Mexico
Arabic	Flemish	Hindi	Brazil	Panama
Armenian	Belgium	Hungarian	Romanian	Peru
Bengali	The Netherlands	Indonesian	Russian	Spain
Bulgarian	Filipino	Italian	Uzbekistan	Swedish
Catalan	Finnish	Japanese	Serbian	Tagalog (Philippines)
Chinese	French	Korean	Sinhalese	Tamil (India)
Simplified	Belgium	Lithuanian	Slovenian	Tamil (Sri Lanka)
Mainland	France	Malaysian	Spanish	Thai
Taiwan	Canada	Norwegian	Argentina	Turkish
Croatian	Switzerland	Persian (Farsi)	Catalan	Urdu (Pakistan)
Czech	German	Polish	Chile	Ukrainian
Danish	Greek	Portuguese	Dominican Republic	

Figure 3

**Number of Researchers Given Permission to Use
the Jefferson Scale of Empathy**



Center Faculty and Staff

Faculty

Charles A. Pohl, MD, Executive Director

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Dr. Charles Pohl is the Senior Vice Provost for Student Affairs at Thomas Jefferson University. In this role, he is responsible for developing and executing a multi campus strategy and overseeing the breath of campus life for the 8,400 students with a particular focus on the multi-dimensional student experience, community and external engagement, alumni relations and philanthropy. Dr. Pohl, a professor of pediatrics, is also the Vice Dean for student affairs at Sidney Kimmel Medical College (formerly known as Jefferson Medical College) and the Executive Director of the Asano-Gonnella Center for Research in Medical Education and Health Care. He is a mission-based leader that brings a perspective to education from his interest and experience in the healthcare learning environment, collaborative compassionate care, and general pediatrics, which has resulted in numerous national presentations, peer-reviewed publications, and a book on medical professionalism. He is currently serving as the Previous Past Chair for the Group of Student Affairs (GSA) for the Association of American Medical Colleges (AAMC) and the Chair of the AAMC GSA Medical Student Performance Evaluation Effective Practices Working Group, as well as has been a previous Chair of the National Gold Humanism Honor Society (GHHS) Advisory Council. His impact on medical education, pediatrics and medicine has been lauded by his induction to the Alpha Omega Alpha Medical Honor Society, the College of Physicians of Philadelphia and the Gold Humanism Honor Society.

Aaron Douglas, PhD, Associate Director of the Jefferson Longitudinal Study

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Aaron Douglas is our newest member of the Center. Dr. Douglas completed his graduate-school training at the Pennsylvania State University in 2004. His specialization is in educational and psychological measurement, research design, survey methodology, and applied statistics. His responsibilities include performing psychometric and statistical analysis related to medical education research, and managing the Jefferson Longitudinal Study. His work will focus on the relationship between the Jefferson Scales and medical student performance outcome measures and provide psychometric research support for the development of new scales and assessments. He also manages the Longitudinal Study database with a focus on tools that will innovate the annual reporting of this important data.

Rosie Frasso, PhD, CPH

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Dr. Rosemary (Rosie) Frasso is a health equity researcher and public health educator, her current research focuses on the integration of qualitative and quantitative methods in projects designed to improve population health, healthcare quality, access to health services for vulnerable populations and evaluation of educational endeavors in medicine, social work, nursing, allied health, and public health settings. Recognized as an expert in mixed methods study design, Dr. Frasso provides consultation and oversight on qualitative projects for clinicians, researchers, and students as well as for partners from local, national and international organizations, including the Children's Hospital of Philadelphia, WillsEye Hospital, the Philadelphia Police Department, the Philadelphia Department of Public Health, the Federal Reserve Banks

of Chicago and Philadelphia, LV Prasad Eye Institute in India, Ulster University, Northern Ireland, and Università Cattolica del Sacro Cuore, Italy. Her expertise in qualitative methods focuses on traditional and alternative data sources and data collection approaches that are crucial to studies designed to inform, assess, and promote health equity interventions. Dr. Frasso has trained hundreds of researchers to conduct rigorous qualitative and mixed methods research studies through a popular mini-course on qualitative research that draws learners from around the US. Dr. Frasso embraces traditional and created data collection approaches, including, but not limited to, arts informed research, tag-along interviews, photo-elicitation interviews, photo-voice, freelisting and consensus-deriving group approaches. Additionally, she has worked on several cross-disciplinary projects with educators, artists and economists who are committed to using qualitative methods to support and enhance community collaborations and to amplify the voices of patients and vulnerable populations. She is an Associate Editor of the European Journal of Public Health and serves as a reviewer for several other journals.

Joseph S. Gonnella, MD, Dean Emeritus

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Dr. Gonnella is Distinguished Professor of Medicine, Dean Emeritus of Jefferson Medical College, and founder of the Center. Dr. Gonnella received his BA from Dartmouth College (summa cum laude) and his MD from Harvard Medical School. He has been awarded the Commendatore dell'ordine della Stella della Solidarietà Italiana in 1978; the Grande Ufficiale in 1995 by the President of Italy; the Dongbaeg Medal by the President of Korea; the Presidential Medal by Dartmouth College; and the Presidential Citation by Thomas Jefferson University; 2015 Consular Award from the Italian Consul General of

Philadelphia. He has received honorary degrees from the University of Chieti, Italy, SoonChunHyang University in Seoul, Korea, Widener University, the University of Minho in Portugal, and the International Medical University of Malaysia. He has also received an honorary professorship from Tianjin Medical College in Tianjin, China, and a Distinguished Fellowship from the International Medical University, Malaysia. In 1998 he received the Abraham Flexner Award from the Association of American Medical Colleges (AAMC). Dr. Gonnella's research has focused on the relationship between knowledge, capabilities, and clinical performance. He has developed the Disease Staging classification system that is used in the U.S. and internationally to assess the quality and costs of health care.

Mohammadreza Hojat, PhD, Director of the Jefferson Longitudinal Study

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Dr. Mohammadreza Hojat is Research Professor in the Department of Psychiatry and Human Behavior and the Director of the Jefferson Longitudinal Study at the Center. He received his PhD from the University of Pennsylvania. In addition to the development of the longitudinal database of medical students and graduates, he has pioneered new instruments measuring psychosocial factors and student personal qualities in relation to academic and clinical performance. Dr. Hojat has led the development of the following scales that measure aspects of professionalism in medicine: Jefferson Scale of Empathy, Jefferson Scale of Physician Lifelong Learning, Jefferson Scale of Attitudes toward Physician–Nurse Collaboration, and Scale of Attitudes toward Interprofessional Collaboration, and Attitudes Toward Osteopathic Medicine Scale. He has more than 40 years of experience in educational and psychological research, and has published over 250 articles in peer reviewed journals and 13 book chapters. He is a

manuscript referee for several American and European professional journals, and has served as a guest co-editor for thematic issues of the *Journal of Social Behavior and Personality* (on loneliness), *Academic Medicine* (on assessments in medical school and beyond), and *Evaluation, the Health Professions* (on changes in the health care system). Dr. Hojat is a licensed psychologist and a coauthor of three books: *Loneliness: Theory, Research, and Applications* (Springer, 1987), and *Assessment Measures in Medical School, Residency, and Practice: The Connections* (Springer, 1993), and *Fifty Years of Findings from the Jefferson Longitudinal Study of Medical Education*, Springer, 2022). Dr. Hojat's book, *Empathy in Patient Care: Antecedents, Development and Outcomes* was published by Springer in 2007, and its updated and expanded edition under a new title, "Empathy in Health Professions Education and Patient Care" was released in 2016.

**Vittorio Maio, PharmD, MS, MSPH,
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Vittorio Maio is the Managing Director of the Center and Director of Health Services Research of the Center and Professor in the Jefferson College of Population Health. He is Director of the Master of Science in Applied Health Economics & Outcomes Research and Director of the post-doctoral Health Economics & Outcomes Research Fellowship Programs. Dr. Maio is also Associate Director for European Grants of the Italy Center. Dr. Maio's research interests are in the areas of outcomes analysis and medication usage and policy. He has been principal investigator on multi-year collaborative projects funded by various Healthcare Authorities in the Regione Emilia-Romagna, Italy, mainly looking at the appropriateness of medication prescribing for the elderly and the assessment of the quality of care in inpatient and outpatient settings. He is

Associate Editor of the *American Journal of Medical Quality*, the *Discover Health Systems*, and the *Italian Journal of Medicine*, and serves as a reviewer for several professional journals, including *JAMA-Internal Medicine*, *The Lancet*, *Pharmacoepidemiology and Drug Safety*, and *Drugs & Aging*. Dr. Maio received his Doctor of Pharmacy degree from the University of Perugia (Italy), took the Italian Pharmacist Board Certification, and received both his Master of Science in Pharmacology and his Master of Science in Public Health from Thomas Jefferson University. He lectures on Health Policy issues in the Masters programs of the Jefferson College of Population Health and in the Master's Program in Management of Health Care Organizations at the University of Pisa, Italy, Faculty of Economics. He teaches Pharmacoepidemiology in the Master of Science Program in Pharmacology for trainees in the NIH K30 Training Program and lectures on Applied Epidemiology in Healthcare at University of Parma, Italy, Faculty of Medicine, College of Specialization in Hygiene. He serves as grant reviewer for the Italian Ministry of Health.

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Jen DeSantis is a Senior Research Study Analyst. She has over fifteen years of experience in psychology and education research and management, with an M.Ed from Stanford University and a B.A from Vassar College. At the Center, she performs statistical analyses for collaborative projects with faculty and students and has co-authored eleven publications since joining the center in 2016. She also manages technical, scoring, and analytic services for a growing number of domestic and

international clients using the Jefferson Scale of Empathy in their research.

Technical Staff

Lifan He, MS, Programmer/Analyst II

Lifan.He@jefferson.edu

Tel: 215-955-6964

As a Senior Technical Analyst, Lifan He manages the database of the Longitudinal Study, which houses over 20 million pieces of data on every Sidney Kimmel Medical College student since 1964. He provides technical support for other assessment databases such as the Student Clerkship Evaluation, NBME Subject Examinations, Objective Structured Clinical Examinations (OSCEs) and the Jefferson Scale of Empathy. Lifan maintains the interface to external data sources such as Banner, New Innovations, NBME, USMLE, AMA and ABMS. He prepares special reports and builds web applications from these sources for clerkship directors, Deans, the Provost, and other leadership. Lifan earned his BS in Neurosciences and MS in Health Informatics at Temple University.

Edward C. Nicks, Jr., Statistical Assistant

Edward.Nicks@jefferson.edu

Tel: 215-955-7360

Mr. Nicks has been with the Center since 1986. He is a Statistical Assistant whose primary responsibility is coordinating examination and evaluation services for the Medical College and the College of Health Professions. He assists in the maintenance of the longitudinal database of medical students and graduates, coordinating mailings, collecting data, and providing statistical analysis and reports. He also assists in the management of computers and other hardware within the Center.

Administrative Staff

Phyllis M. Accetta, Administrative Assistant

Phyllis.Accetta@jefferson.edu

Tel: 215-955-6634

Mrs. Accetta is the Administrative Assistant to Dr. Joseph Gonnella, Distinguished Professor of Medicine, Dean Emeritus. She came to the Center in July 2000. Prior to coming to the Center she was Secretary to the Dean of Jefferson Medical College. She also provides support to Center staff for the preparation of project reports, slide presentations, meetings and event planning.

Shira A. Carroll, BA, Administrative Assistant

Shira.Carroll@jefferson.edu

Tel: 215-955-9458

Since 2015, Shira Carroll has been the Administrative Assistant for the Center, the Assistant to Vittorio Maio, Managing Director, and the Project Coordinator for the Jefferson Empathy Project. Her responsibilities include responding to inquiries from researchers worldwide with information and resources regarding permission of use of the Jefferson Scale of Empathy and the 11 assessment scales. She maintains a database of users and translations. She also provides administrative support to the Center staff for a variety of other projects and publications.

Jefferson Research Collaborators

The Center collaborates with multiple other Thomas Jefferson University faculty and staff. The following individuals served a major role on externally funded Center projects in the current academic year.

Scott W. Keith, PhD, MS, Associate Professor of Biostatistics, Department of Pharmacology and Experimental Therapeutics

Scott.Keith@jefferson.edu

Tel: 215-503-9876

Scott W. Keith is an Associate Professor of

Biostatistics in the Department of Pharmacology and Experimental Therapeutics, Division of Biostatistics. He received his BA from The University of Vermont, his MS in Mathematics from The University of New Orleans, and his PhD in Biostatistics from The University of Alabama at Birmingham. He is Associate Editor of *Frontiers in Nutrition Methodology* and Editorial Board Member of *Hypertension*. Dr. Keith's research interests include obesity-related outcomes, cancer outcomes, risk of hospitalization, medication usage and policy, modeling event rate data, and developing nonlinear and multilevel statistical methods. He teaches GC 630: "Fundamentals of Clinical Trials" in the Jefferson College of Life Sciences. Dr. Keith is collaborating with Center faculty and staff on several projects performed in collaboration with the Agency for Health and Social Care of the Emilia-Romagna Region and the Parma Local Health Authority.

**Mary R. Robeson, MS, Project Coordinator,
Medical Education Division**

Mary.Robeson@jefferson.edu

Tel: 215-955-9390

Mary R. Robeson retired in March of 2018. She had been a collaborator on projects studying the quality and cost of care in the Italian health care system, and in the development of a risk of hospitalization model, and patient profiles based on that model for adult residents of the Emilia-Romagna Region of Italy. In addition, she had been involved in the development of a risk of hospitalization predictive model to identify high-risk patients in the pediatric population in the Emilia-Romagna Region. She was also involved in student assessment and evaluation of the medical education programs. Ms. Robeson also had a major role in the data analysis and scoring of the OSCEs at the Clinical Skills Center. She also acted as a consultant for the evaluation services for the Medical College and the College of Health Professions. Her background is in psychology and sociology,

statistics, testing, and measurement. Ms. Robeson holds a master's degree in educational measurement from the University of Pennsylvania.

Carol Rabinowitz, BA, Programmer/Analyst

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Mrs. Rabinowitz is Programmer/Analyst for the Center. She holds a bachelor's degree in Sociology and Mathematics from Rutgers University. She is responsible for SAS programming for projects analyzing data from the health care databases of the Emilia-Romagna Region, Italy.

Visiting Scholars

The Center periodically hosts researchers from other institutions. The Center's visiting scholars include:

Alawi Alsheikh-Ali, MD

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Trustee of Board of Trustees
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Michiyasu Yoshiara, MD

Chairman, The Board of Directors
Japan Association for Development of
Community Medicine (JADECOM)
Tokyo, Japan
yosiara@jadecom.or.jp

Teaching and Other Professional Activities

Publications

Aliberti SM, Funk RHW, Ciaglia E,
Gonnella J, Giudice A, Vecchione C, Puca
AA, Capunzo M. Old, Nonagenarians, and
Centenarians in Cilento, Italy and the
Association of Lifespan with the Level of
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and Lifestyle, and Determinants of
Community Well-Being of Patients from the
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Study of Young Older Adults,

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Fish AM, Romano E, Ostroff P, Ziring D, George B, **Frasso R**, Hayden G. Virtual

Community Health Workers: Approaches to Patient Outreach During the COVID-19 Pandemic. *Journal of health care for the poor and underserved*. 2022;33(1):213–220. <https://doi.org/10.1353/hpu.2022.0016>

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Granberg RE, Heyer A, Gehrman PR, Gunter PW, Hoff, NA, Guth, A, Kayser, M.S, Kuna, S, **Frasso, R**. Patient and Provider Experiences with CBT-I Administered In-Person or via Telemedicine: A Randomized Non-Inferiority Trial. *Cogent Psychology*. 2022. <https://doi.org/10.1080/23311908.2022.2038936>

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Wilson, R, Varshney, K, Petrera, M, Hoff, N, Theil, B, **Frasso, R**. Reflections of Graduating Medical Students: A Photo-Elicitation Study. *Med.Sci.Educ*. 2023.
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Presentations

Deluca A, Frasso R, Vervilles W, ...Pohl C. *Virtual Reality Gaming: Providers' Concerns About Child Exposures to Sexual Violence in the Metaverse*". The American Public Health Association 2022 Annual Meeting (Boston, MA, November, 2022

Frasso R. Arts Informed Research/Photo Voice: Lecture and Workshop Series: Ulster University, Belfast, Northern Ireland, February 2023

Frasso R. Qualitative Research Part 3: Analysis, Dissemination, Policy, and Action: A Lecture Series for Catholic University of the Sacred Heart, Rome, Italy, May -22

Frasso R. Qualitative Research: Tools for Understanding Community Needs and Amplifying Voices. The European Public Health, May 2022 Association. Virtual Presentation, Rome, Italy

Frasso R. Qualitative Research Part 2: Community Based Work: A Lecture Series at Catholic University of the Sacred Heart, Rome, Italy, March 22

Hojat M. Webinar on the *Project in Osteopathic Medical Education and Empathy: What Have We Learned and Where Do We Go from Here?* Sponsored by the American Association of Colleges of Osteopathic Medicine. January, 2021: <https://vimeo.com/502352852/7f473db433>

Hojat M. *Webinar on Association Between Empathy in Patient Care and Well-Being of Trainees, Clinicians, and Patients, sponsored by the Trenton Psychiatric Hospital, New Jersey Department of Health, NJ.* March, 2021

Litvintchouk AM, Amaefule AQ, Lamm R, McAna J, Rabinowitz C, Shah A, **Maio V.** *To What Extent Is Allocation of Higher KDPI Score Kidney Transplantation Occurring in the US?* 2023 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Boston, May 8, 2023

Litvintchouk AM, Moeller P, **Maio V,** Goldfarb N. *Descriptive Analysis of Botulinum Toxin Use for Migraine and Member Costs in an Employed Population.* 2023 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Boston, May 8, 2023

Litvintchouk AM, Moeller P, **Maio V,** Goldfarb N. *A Descriptive Analysis of Botulinum Toxin Utilization for Migraine in a Multi-Employer Population.* 2023 AMCP Annual Meeting, San Antonio, TX, May 8, 2023

Maio V. *Analytical instruments for the evaluation and management of healthcare needs of the pediatric population.* Pediatric Hospital Bambino Gesù, Rome, Italy. June 5, 2023

Ngyuen J, Walsh K, **Maio V,** Park S, Patel S, Keith SW, Handley N, Pracilio Csik V. *Total cost of care of hematologic malignancy episodes versus target price under the oncology care model.* 2022 ASCO Quality Care Symposium, Chicago, September 9, 2022

Phan P, Lamm R, Rabinowitz C, McAna J, Shah A, **Maio V.** *5-Year Graft Failure Outcomes Utilizing Kidneys with Higher*

Kidney Donor Profile Index Scores Across Different Age Groups and Sex over a 10-Year Period. 2023 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Boston, May 8, 2023

Pohl CA. *Enhancing the Resilience and Mental Wellbeing of Medical Students During the Transition to Residency.* NRMP Transition into Residency: Conversations Across the Medical Education Continuum Meeting, San Diego, CA, October 2022

Pohl CA. *The Changing Face of Health Care in the Age of Innovation & Disruption* at Universita Cattolica del Sacro Cuore/Gemelli Hospital, Rome, Italy, June, 2023

Shah A, Litvintchouk AM, Amaefule AQ, Lamm R, McAna J, Rabinowitz C, **Maio V.** *10-Year Trends and Pattern of Kidney Transplantation According to KDPI Score and Factors Associated with Allocation of Higher KDPI Score.* 2023 American Transplant Congress, San Diego, June 3, 2023

Awards

Vittorio Maio, PharmD, MS, MSPH

2023 Thomas Jefferson Provost Career Achievement Award

Rosemary Frasso, PhD, CPH

Philadelphia College of Physicians, Public Health Section, Public Health Service Award 2023

Charles A. Pohl, MD 2022 AAMC Group of Student Affairs Exemplary Service Award 2022

Charles A. Pohl, MD NMRI Recognition at 40th Anniversary of Noguchi Medical Research Institute 2023

Teaching

Vittorio Maio, PharmD, MS, MSPH

Pharmacoepidemiology

Master of Science in Pharmacology, Thomas Jefferson University, *Management delle Aziende Sanitarie* Master's Program in Health Care Management, University of Pisa, Italy.

Applied Epidemiology in Healthcare School of Specialization in Hygiene, Faculty of Medicine, University of Parma, Italy.

Other Professional Activities

Rosemary Frasso, PhD, CPH

Memberships

- Delta Omega – Public Health National Honorary Society
- Fellow, College of Physicians, Philadelphia, Pennsylvania
- Society of Prevention Teaching and Research
- Association of Schools and Programs in Public Health
- Society for Public Health Education
- American Public Health Association

Reviewer

- *Discover Social Science and Health*
- *BMC Public Health*
- *European Journal of Public Health*
- *American Public Health Association*
- *Population Health Management*
- *Frontiers in Public Health*
- *ASSPH* Poster Reviewer/Judge

Joseph S. Gonnella, MD

- Alpha Omega Alpha Honor Medical Society (Honorary)
- American Association for the Advancement of Science
- Nacional Academy of Medicine, Mexico
- Royal College of Physicians, Edinburgh, Scotland

Extramural Activities

- Noguchi Medical Research Institute, Emeritus Trustee
- Tianjin Medical University, People's Republic of China – Chairman of Advisory Committee of Foreign Experts
- University of Minho, Portugal, External Advisory Committee

Mohammadreza Hojat, PhD

Memberships

- American Psychological Association

Reviewer

- *Academic Medicine*
- *Journal of Family Issues*
- *Medical Education*
- *Medical Teacher*
- *Nursing Research*

Editorial Board

- *Journal of Patient Experience*
- *International Journal of Medical Education*

Vittorio Maio, PharmD, MS, MSPH

Memberships

- Associate Editor, *American Journal of Medical Quality*
- Associate Editor, *Discover Health Systems*
- Associate Editor, *Italian Journal of Medicine*
- Grant Reviewer, *Italian Ministry of Health*

Reviewer

- *Age and Aging*
- *American Journal of Obstetrics and Gynecology Maternal Fetal Medicine*
- *Amer. J. of Pharmaceutical Education*
- *British Medical Journal*
- *BMJ Leader*
- *BMJ Quality and Safety*
- *Clinical Drug Investigation*
- *Clinical Interventions in Aging*
- *Diabetes Research and Clinical Practice*
- *Drugs & Aging*
- *European Journal of Internal Medicine*

- *European Journal of Hospital Pharmacy*
- *International Journal of Clinical Practice*
- *JAMA – Internal Medicine*
- *Journal of Clinical Pharmacy and Therapeutics*
- *Journal of Geriatric Psychiatry and Neurology*
- *Journal of Interprofessional Care*
- *Journal of Pain and Symptom Management*
- *Medical Science Monitor*
- *Pharmacoepidemiology and Drug Safety*
- *Pharmacological Research*
- *PlosOne*
- *Population Health Management*
- *Psychiatric Services*
- *Quality in Primary Care*
- *Scientific Reports*
 - *The Joint Commission Journal on Quality and Patient Safety*

- National GHHS Advisory Council, Nomination Subcommittee
- AAMC Group on Student Affairs National Executive Steering Committee
- Chair, *AAMC Medical Student Performance Evaluation (MSPE) Effective Practice Working Group*
- *College of Physicians of Philadelphia*
- Executive Director, *Jefferson Japan Center Advisory Committee, Thomas Jefferson University*
- *LCME Self Study Task Force, Sidney Kimmel Medical College*
- Chair, *COVID Student Steering Committee, Thomas Jefferson University*
- *Sidney Kimmel Medical College Committee on Diversity and Inclusion, Sidney Kimmel Medical College*

Charles A. Pohl, MD
Memberships

Exhibits

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Exhibit 1
Undergraduate Science GPA

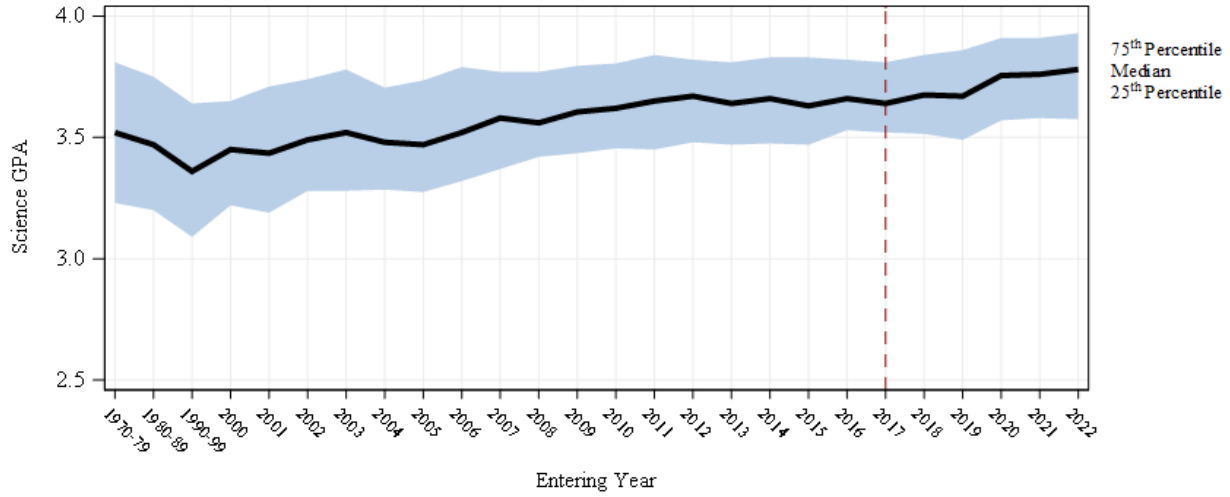
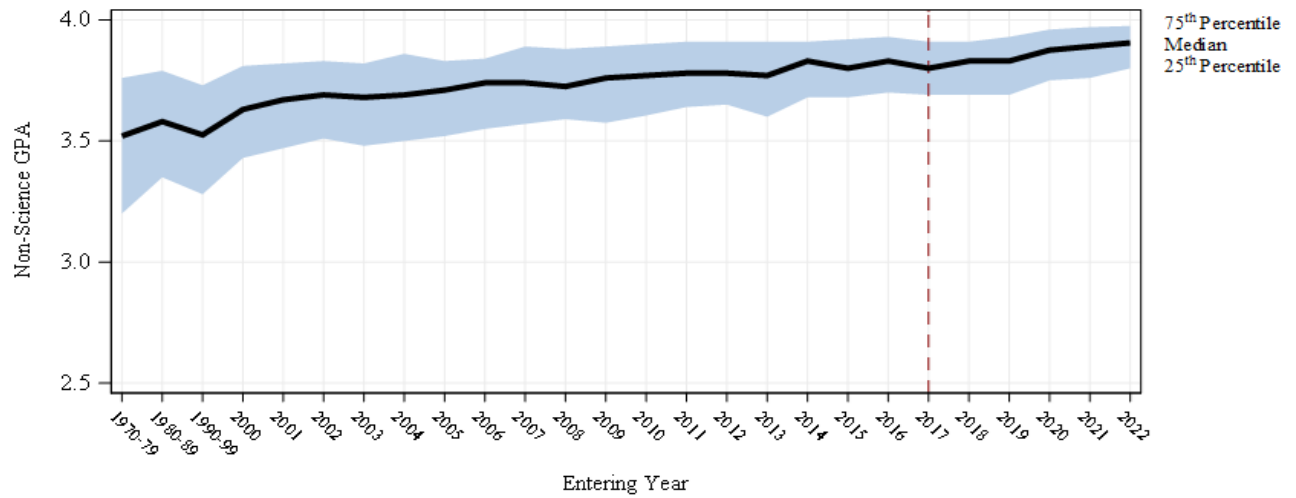


Exhibit 2
Undergraduate Non-Science GPA



The new JeffMD curriculum was implemented in 2017, shown by vertical dash-line.

Exhibit 3
Average MCAT Scores of Matriculants (Biological and Biochemical Foundations of Living Systems)

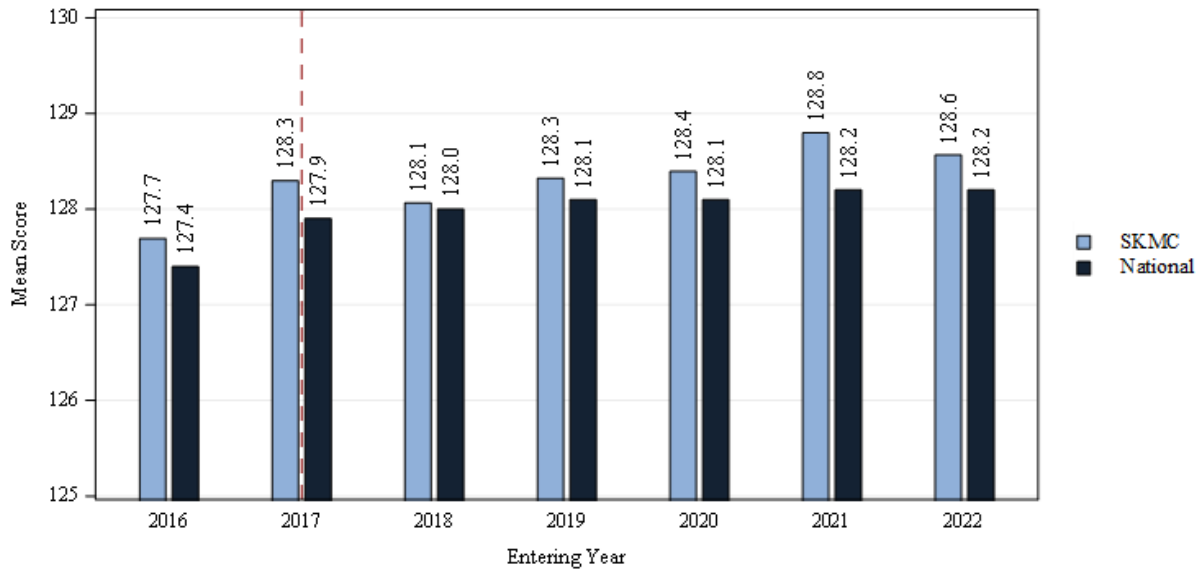
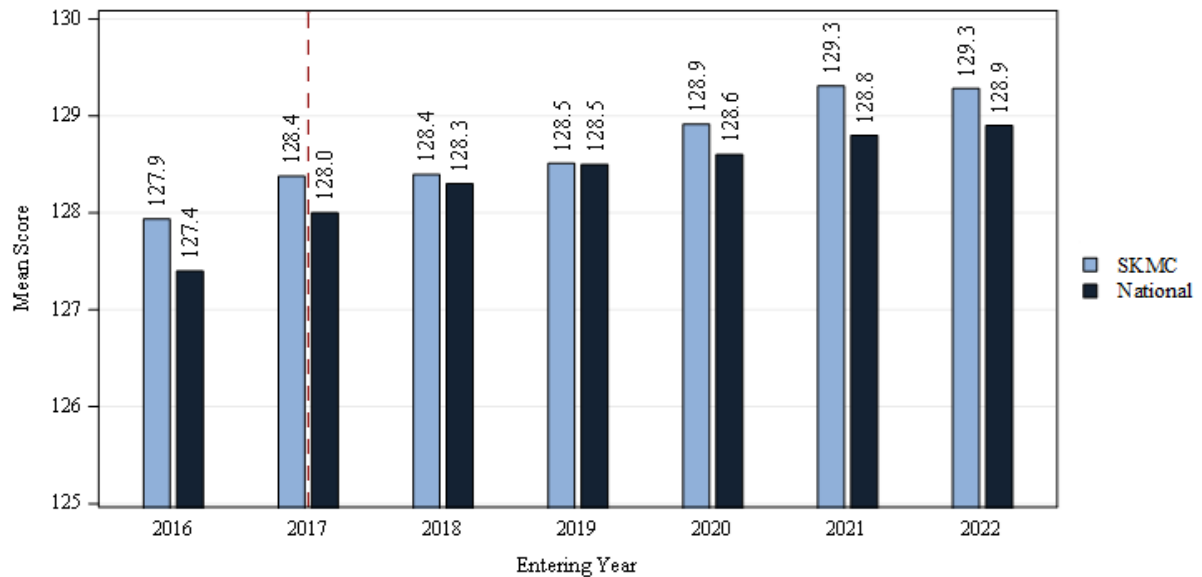


Exhibit 4
Average MCAT Scores of Matriculants (Psychological, Social, and Biological Foundations of Behavior)



The new JeffMD curriculum was implemented in 2017, shown by vertical dash-line.

Exhibit 5
Average MCAT Scores of Matriculants (Chemical and Physical Foundations of Biological Systems)

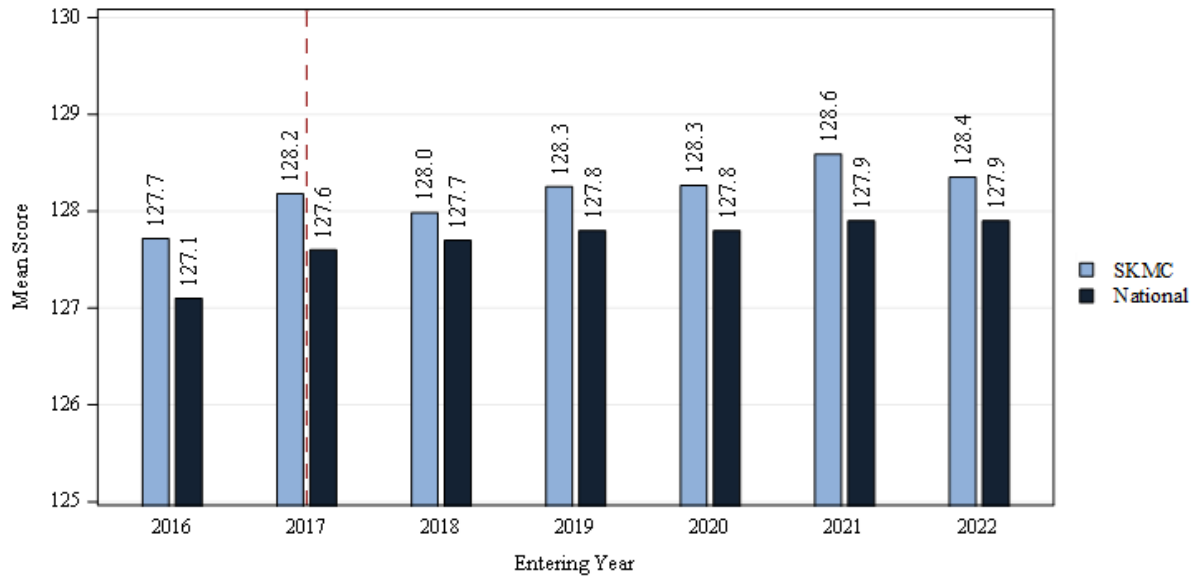
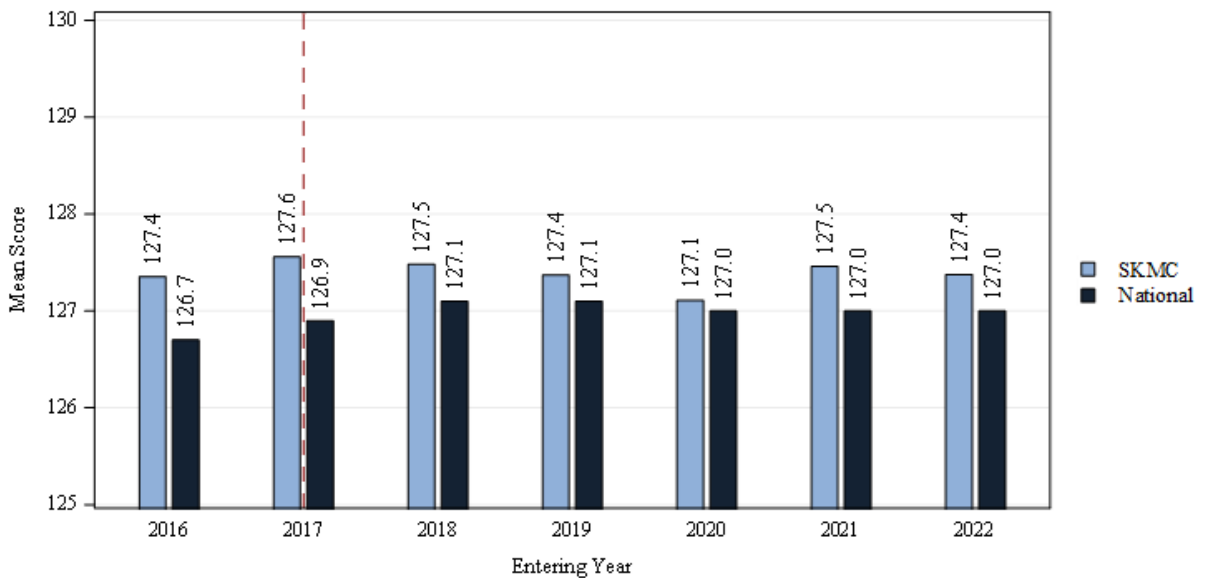


Exhibit 6
Average MCAT Scores of Matriculants (Critical Analysis and Reasoning Skills)



The new JeffMD curriculum was implemented in 2017, shown by vertical dash-line.

Exhibit 7 Percent of Matriculants by Gender

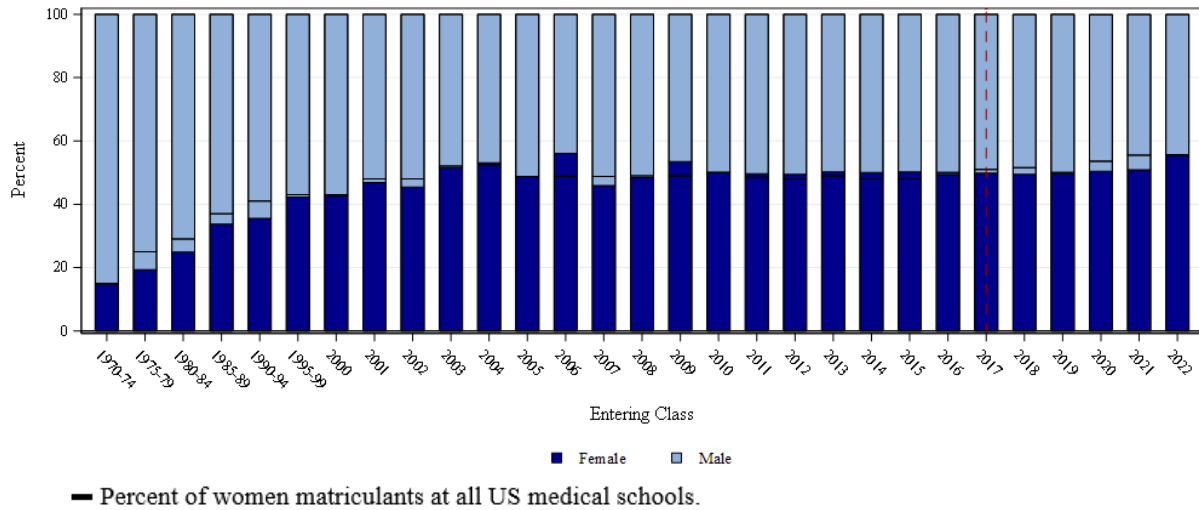
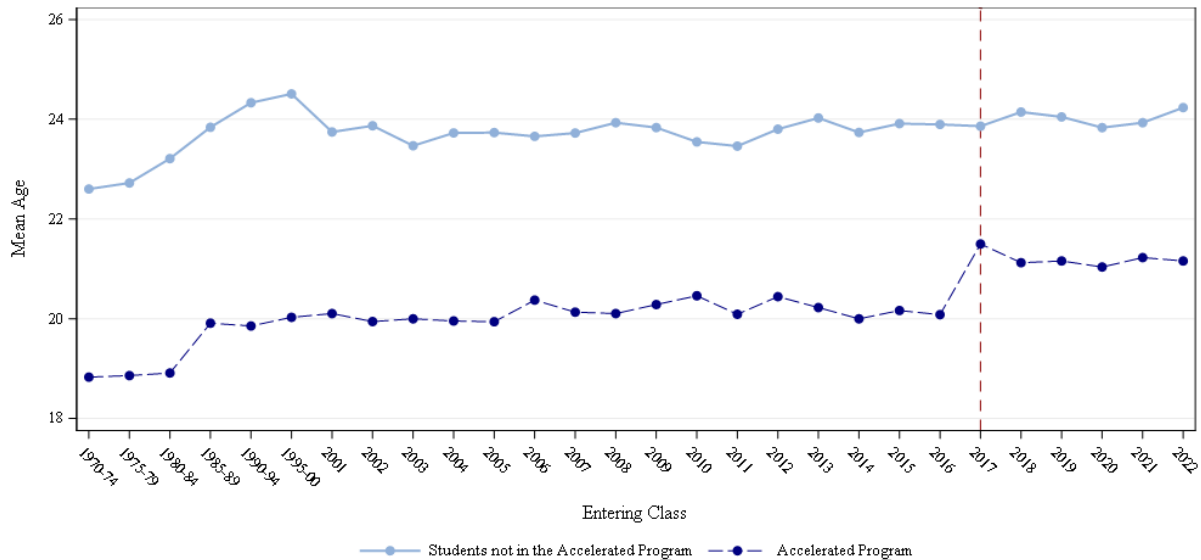


Exhibit 8 Mean Age at Matriculation

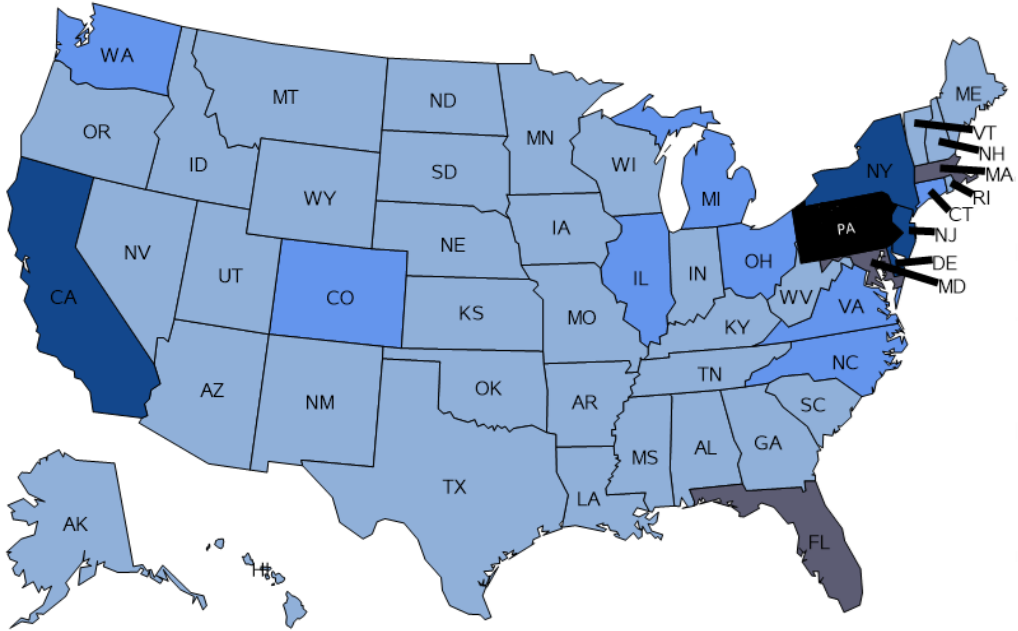


The accelerated program had been a 5-year combined BS-MD program before 1984. During the transition year 1984, no students were admitted to the program. It became a 6-year program between 1985-2015. Thereafter, it became a 7-year program. Increase in age of accelerated students in 1985 and 2017 is due to the changes in the length of the program.

The new JeffMD curriculum was implemented in 2017, shown by vertical dash-line.

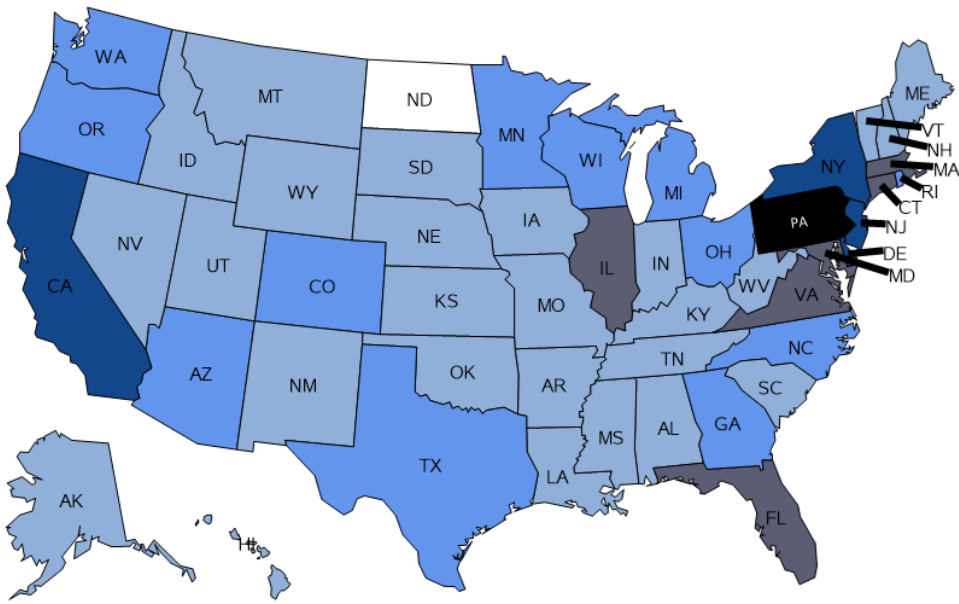
Exhibit 9 Home State

Entering Classes of 1970-2023



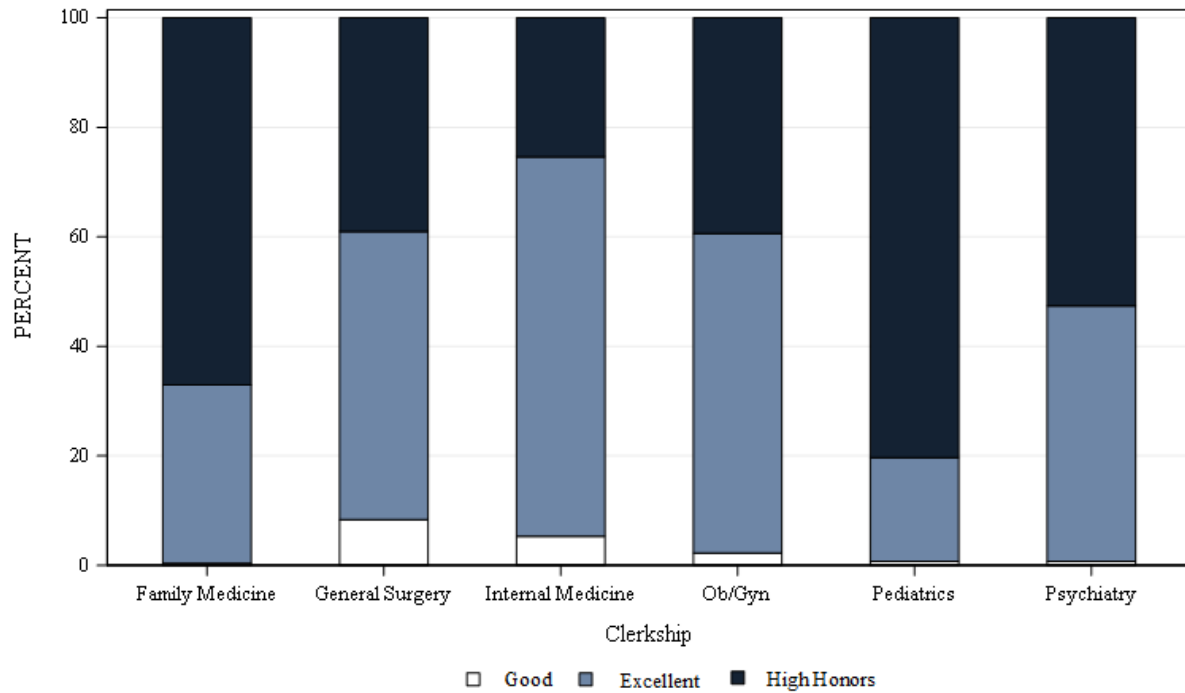
Percent of Total Frequency < 1% 1% 2-3% 6-11% 48%

Entering Classes of 2013-2023



Percent of Total Frequency 0 < 1% 1% 2-4% 6-13% 33%

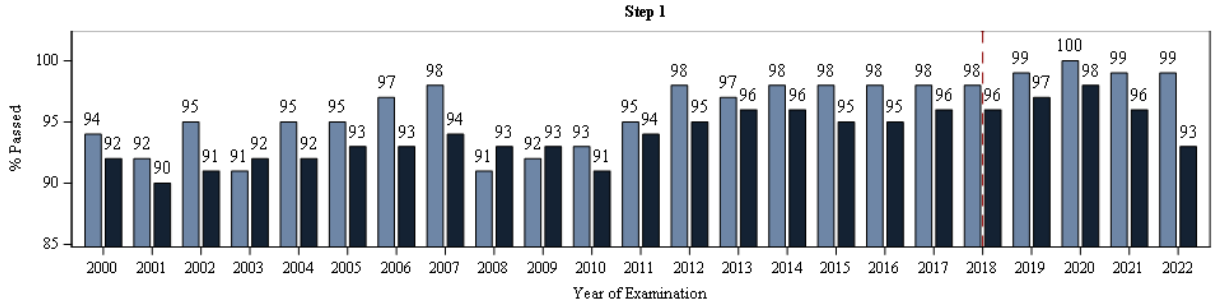
Exhibit 10
Clinical Rating of Students for Six Core Clerkships*
Graduating Class of 2023



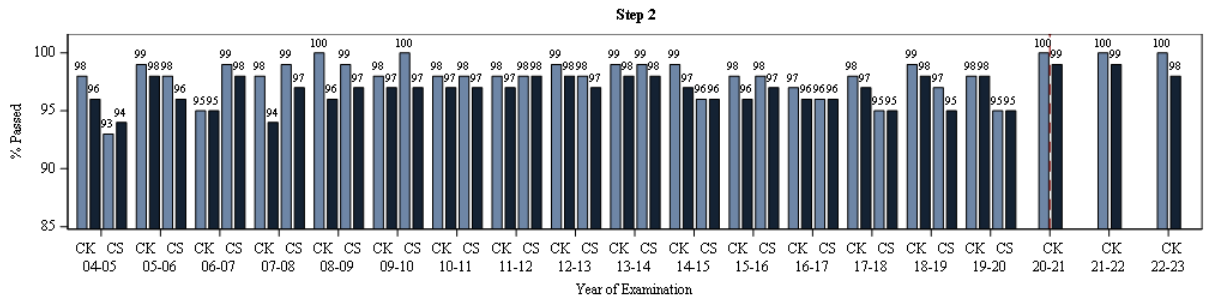
*Faculty's global rating of students' clinical competence. The clerkships completed by students that were in the Longitudinal Integration Curriculum (LIC) track occurred for a full academic year. For non-LIC students, however, the clerkships of Family Medicine, General Surgery, Ob/GYN, Pediatrics, and Psychiatry were 6 weeks in duration; and the Internal Medicine clerkship was 8 weeks in duration.

Exhibit 11 Pass Rates on the United States Medical Licensing Examination (USMLE)

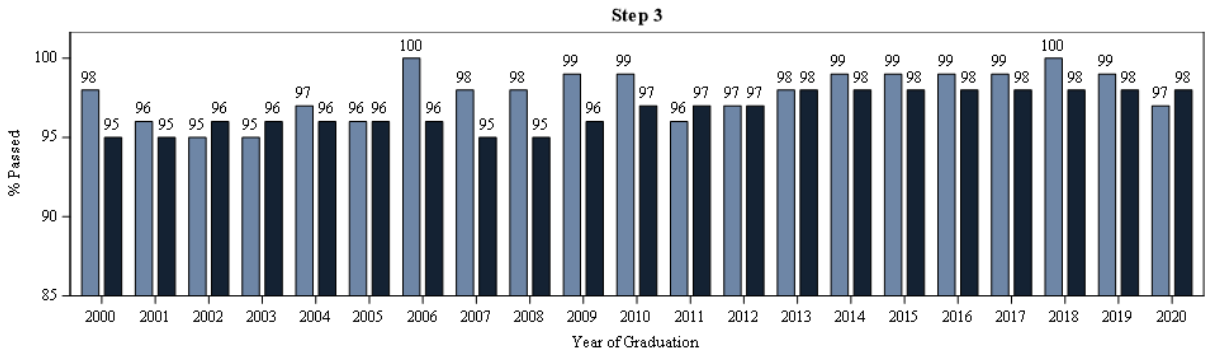
■ Jefferson ■ National



- Data is presented for the candidate reference group who took the examination for the first time each year and who were two years from expected graduation.

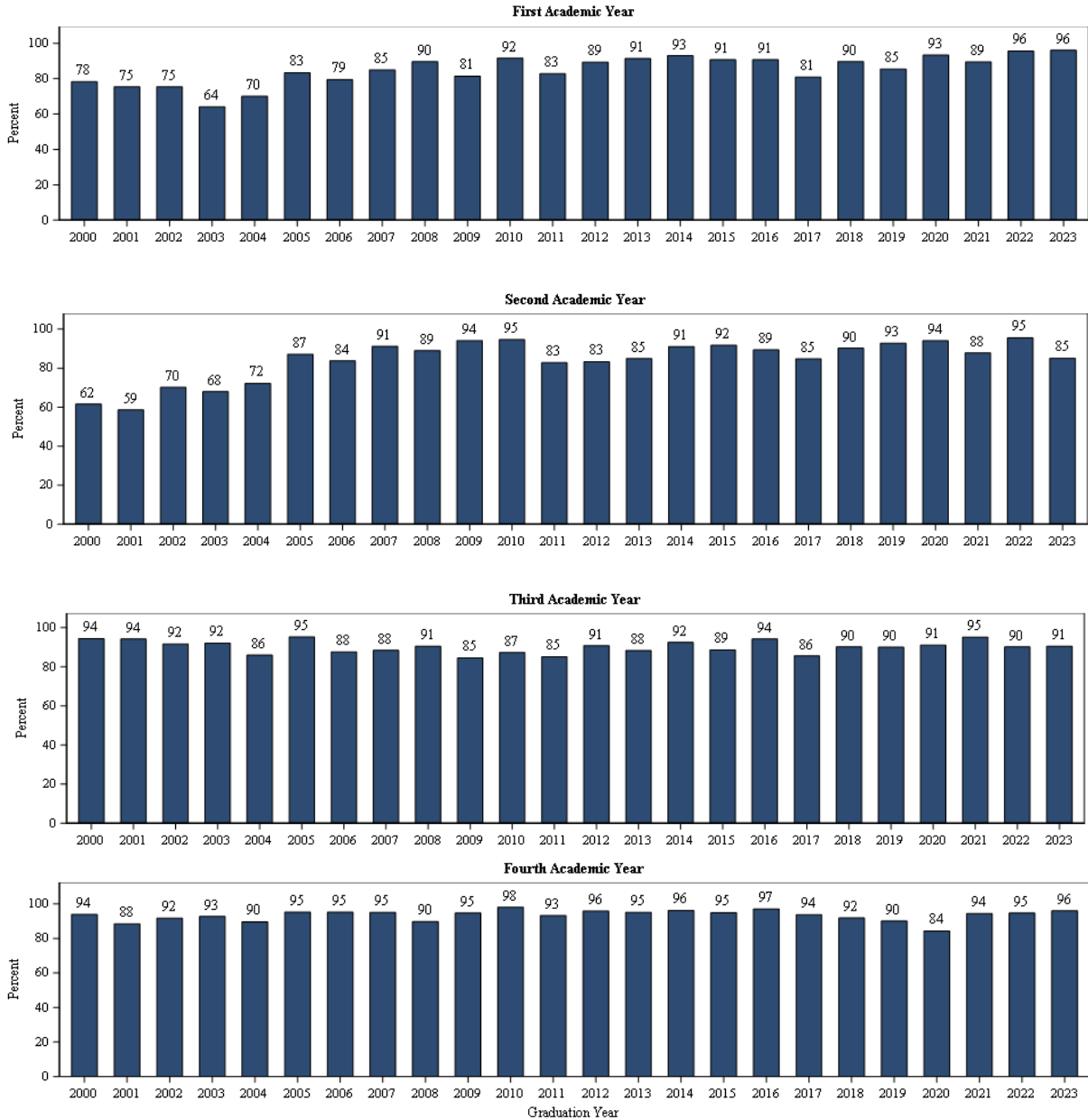


- Data is presented for the candidate reference group who took the examination for the first time each year and who were one year from expected graduation. Starting from July 2004, Step 2 reports 2 scores, one for Clinical Knowledge (CK) and another for Clinical Skills (CS). Starting from July 2020, Step 2 reports scores for Clinical Knowledge (CK) only.



- Data is presented for graduates who took the examination for the first time in each year.

Exhibit 12
Percentage of Graduating Students Who Were Satisfied with the
Jefferson Medical College Educational Programs*



*From graduation questionnaire of the Jefferson Longitudinal Study asking medical students the extent of their satisfaction with each medical school year on a 4-point scale (4=very satisfied, 3= satisfied, 2=dissatisfied, 1= very dissatisfied). Response rates ranged from 44% to 92%.

Exhibit 13
Percentage of Seniors' Responses to the Following Question¹:
"How well do you feel that education at Jefferson prepared you for a career in medicine?"
Graduating Classes of 2000-2023

Scale Points											
Graduating Class	1 Very Poorly	2	3	4	5	6	7	8	9	10 Very Well	Mean Score
2000	0%	1%	1%	1%	5%	10%	25%	36%	17%	6%	7.59
2001	0%	1%	4%	3%	5%	12%	24%	39%	10%	3%	7.17
2002	0%	1%	1%	2%	5%	8%	28%	32%	18%	5%	7.51
2003	0%	0%	1%	4%	4%	7%	29%	37%	15%	3%	7.44
2004	0%	0%	2%	4%	11%	6%	21%	32%	20%	4%	7.35
2005	0%	1%	0%	1%	2%	6%	17%	43%	20%	10%	7.98
2006	0%	0%	0%	1%	1%	3%	19%	43%	25%	9%	8.11
2007	0%	0%	0%	1%	2%	4%	21%	38%	27%	6%	7.98
2008	0%	1%	0%	2%	1%	6%	11%	39%	29%	11%	8.11
2009	0%	0%	0%	1%	3%	5%	17%	37%	30%	6%	7.99
2010	0%	0%	0%	0%	1%	4%	12%	39%	27%	16%	8.33
2011	0%	0%	0%	3%	1%	6%	20%	39%	26%	5%	7.84
2012	0%	0%	0%	0%	1%	3%	17%	43%	28%	8%	8.18
2013	0%	0%	0%	0%	2%	4%	16%	36%	31%	10%	8.18
2014	0%	0%	2%	0%	0%	3%	13%	37%	30%	15%	8.31
2015	0%	0%	0%	1%	2%	2%	16%	36%	27%	16%	8.30
2016	0%	0%	0%	0%	1%	3%	13%	29%	39%	14%	8.41
2017	0%	0%	1%	1%	2%	3%	21%	40%	24%	9%	8.01
2018	1%	0%	0%	0%	1%	5%	17%	38%	30%	8%	8.11
2019	0%	0%	0%	1%	1%	3%	19%	43%	24%	8%	8.05
2020	0%	0%	1%	2%	1%	4%	19%	38%	26%	9%	8.01
2021	0%	0%	0%	1%	2%	5%	12%	37%	24%	20%	8.33
2022	0%	0%	1%	0%	1%	3%	13%	30%	29%	23%	8.50
2023	1%	0%	0%	0%	0%	1%	16%	34%	29%	18%	8.35

¹From the graduation questionnaires of the Jefferson Longitudinal Study. Response rates ranged from 44% to 92%.

Exhibit 14
Graduation, Transfers, and Attrition
Entering Classes of 2000-2019

Entering Class		% Graduate			% Transferred	% Did Not Graduate*** *
Year	Size	On Time*	Late**			
			Academic***	Non-Academic		
2000	223	89.7%	4.5%	3.6%	0.0%	2.2%
2001	224	87.9%	3.6%	4.9%	0.4%	3.1%
2002	227	87.7%	3.5%	3.5%	0.4%	4.8%
2003	229	89.1%	4.4%	1.7%	0.9%	3.9%
2004	228	84.6%	2.2%	9.2%	0.4%	3.5%
2005	254	89.0%	2.4%	5.9%	0.0%	2.8%
2006	255	85.1%	4.3%	7.8%	0.0%	2.7%
2007	259	83.4%	4.2%	8.5%	0.4%	3.5%
2008	254	85.0%	2.4%	9.4%	0.0%	3.1%
2009	256	87.5%	4.3%	5.9%	0.0%	2.0%
2010	260	83.1%	2.3%	10.8%	0.0%	3.5%
2011	260	93.5%	0.4%	5.0%	0.0%	1.2%
2012	261	88.5%	6.1%	4.6%	0.0%	0.8%
2013	259	89.2%	2.3%	8.1%	0.0%	0.4%
2014	260	82.3%	1.9%	13.5%	0.0%	2.3%
2015	267	81.3%	1.5%	15.0%	0.0%	2.2%
2016	267	80.9%	1.1%	16.1%	0.0%	1.9%
2017	273	81.7%	2.9%	14.7%	0.0%	0.7%
2018	269	78.1%	1.1%	11.5%	0.0%	9.3%
2019	272	90.8%	0.7%	7.7%	0.0%	0.7%

* Includes graduates from combined degree programs.

** Delayed graduation for current students includes those on leave of absence.

*** Delayed graduation for not meeting academic standards.

**** Includes withdraw, dismiss, and deceased students.

Exhibit 15 Location of First Year Postgraduate Education

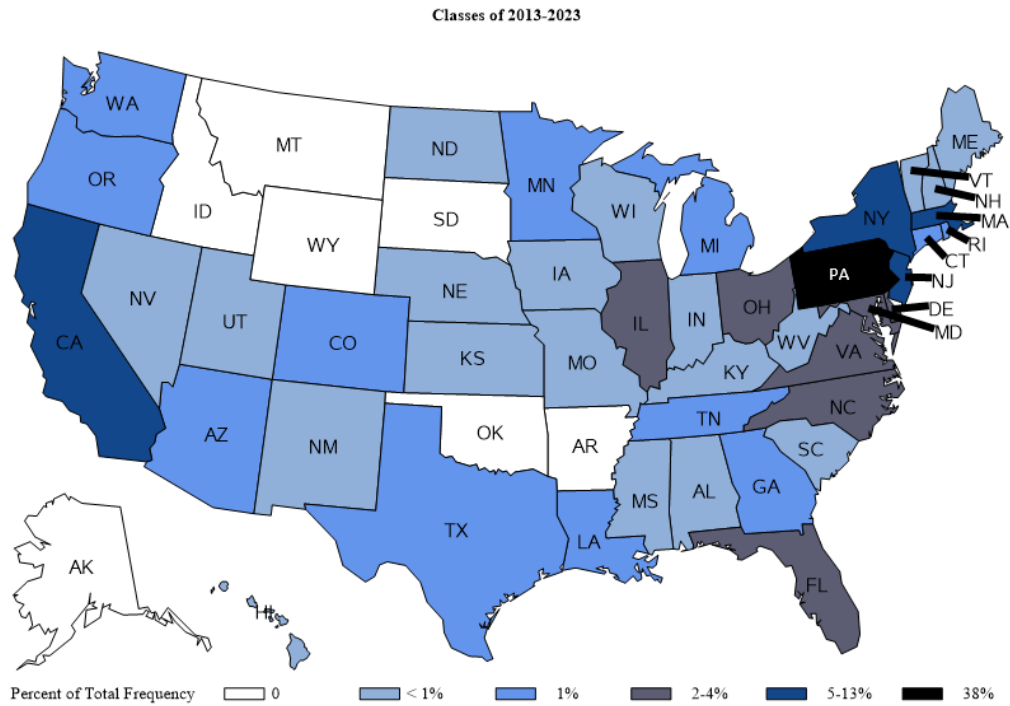
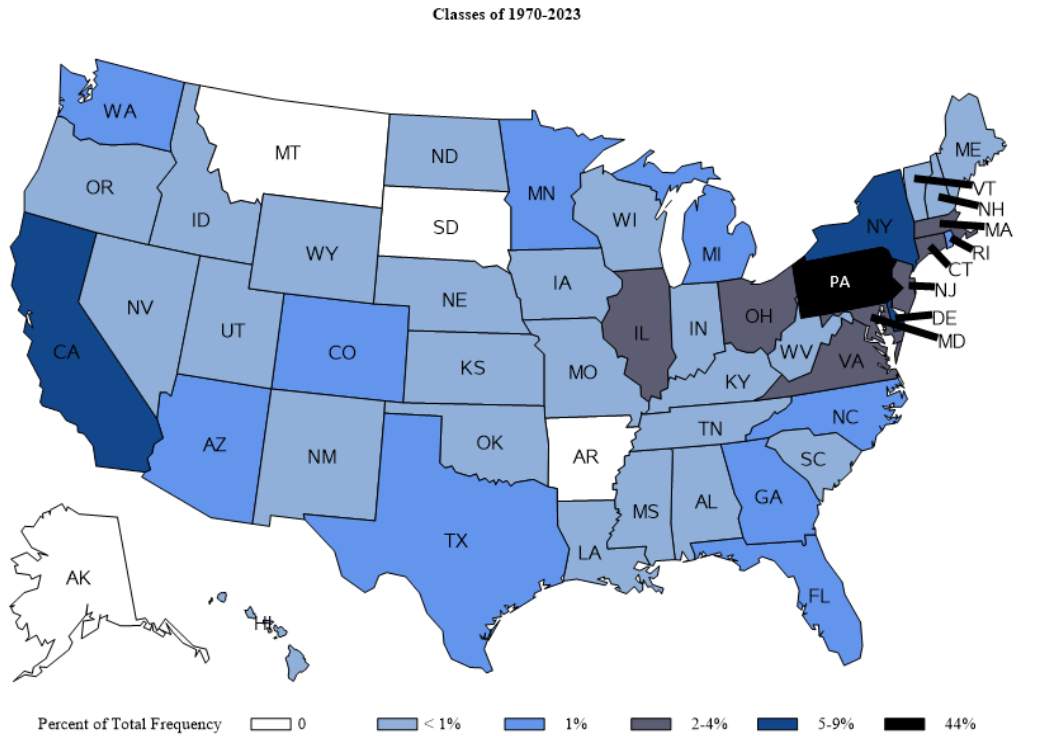
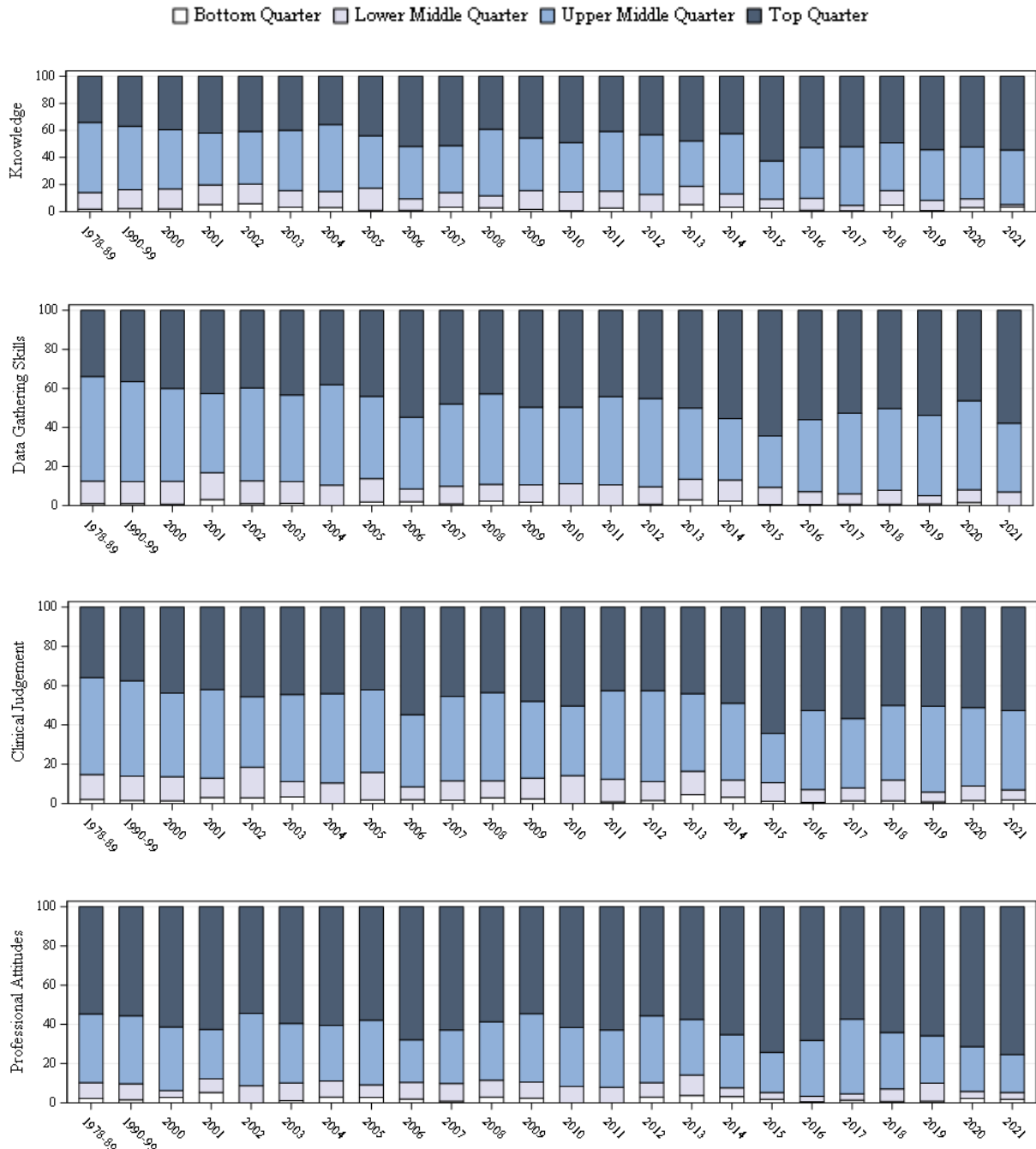


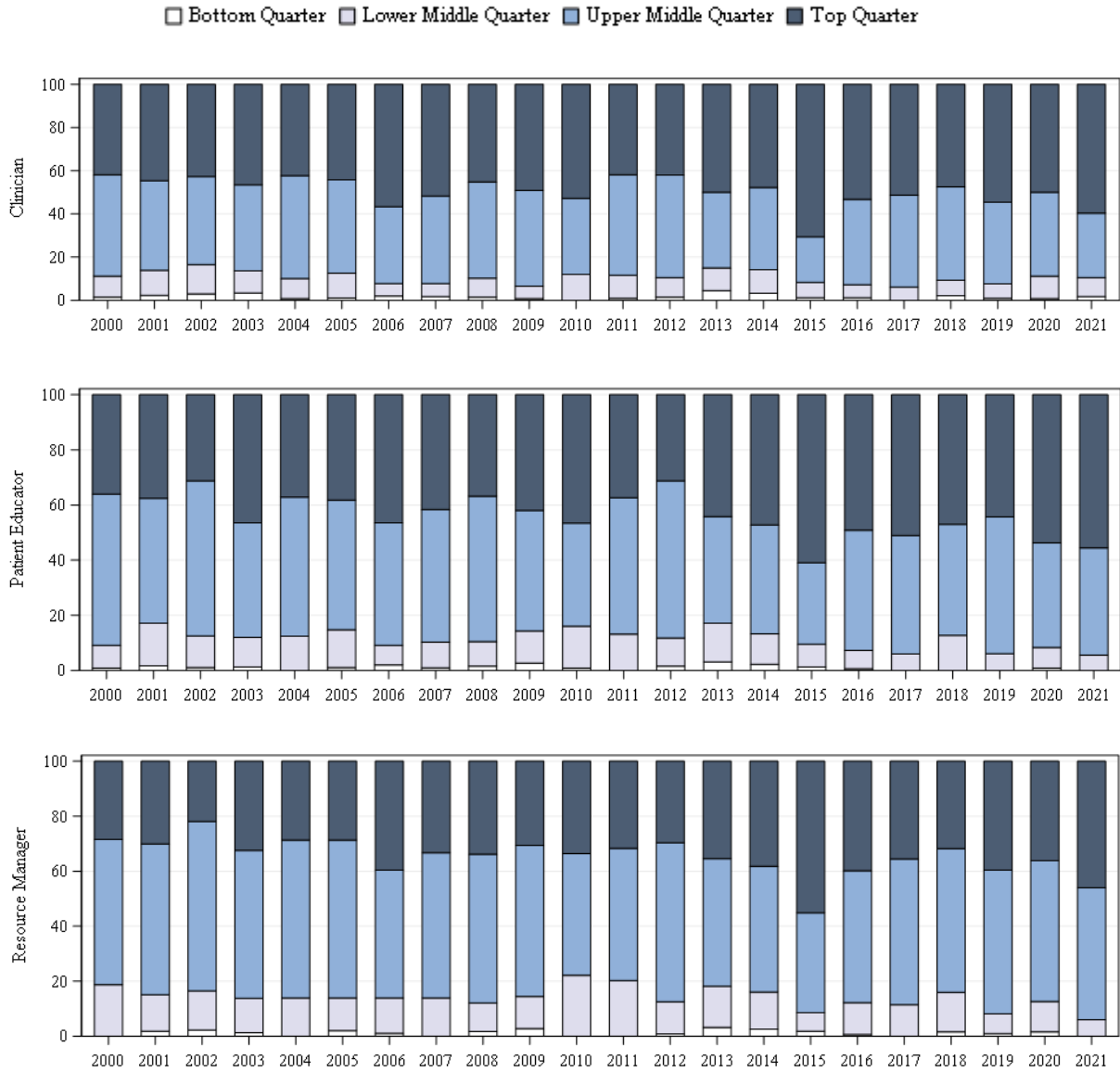
Exhibit 16
Program Directors' Ratings in the First Postgraduate Year*
Graduating Classes of 1978-2021



*Response rates vary among classes, ranging from 22% to 84%. Each response rate is calculated based on the total number of graduates in the class.

Program directors rated the graduates on 4-point scale comparing them with all graduates they ever supervised. See Section II of the postgraduate rating form on page 39 of this report.

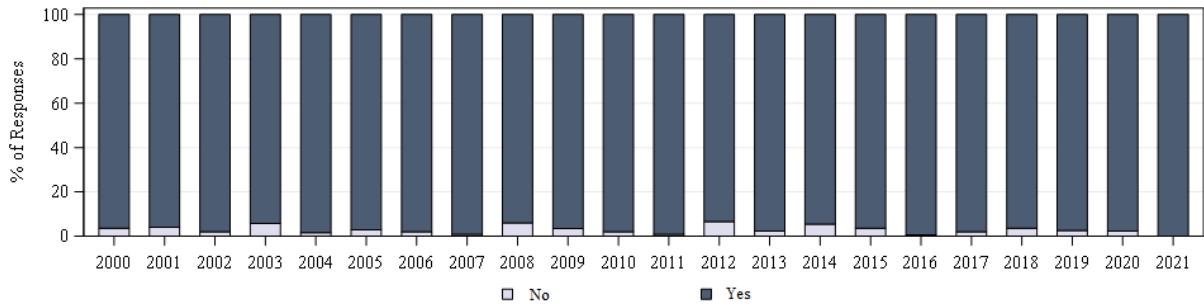
Exhibit 17
Program Directors' Ratings on Graduates' Ability to Perform the Three Roles of Clinician, Patient Educator, and Resource Manager in the First Postgraduate Year. *
Graduating Classes of 2000-2021



*Response rates vary among classes, ranging from 19% to 72%. Each response rate is calculated based on the total number of graduates in the class.

Program directors rated the graduates on 4-point scale comparing them with all graduates they ever supervised. See Section III of the postgraduate rating form on page 39 of this report.

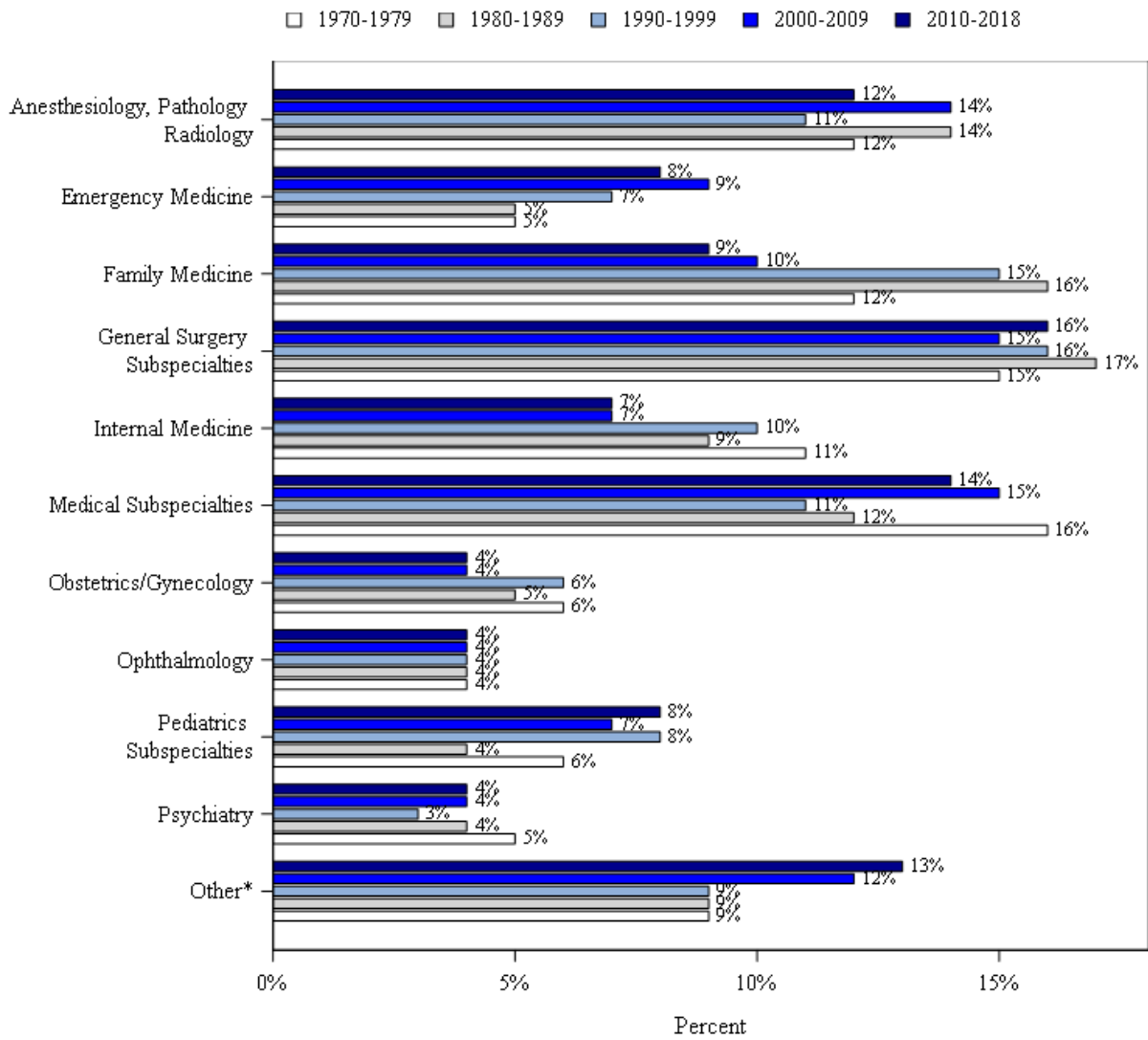
Exhibit 18
Program Directors' response to "Does This Resident Have the Qualities You Would Like to See in Your Own Physician*"
Graduating Classes of 2000-2021



*Response rates vary among classes, ranging from 19% to 72%. Each response rate is calculated based on the total number of graduates in the class.

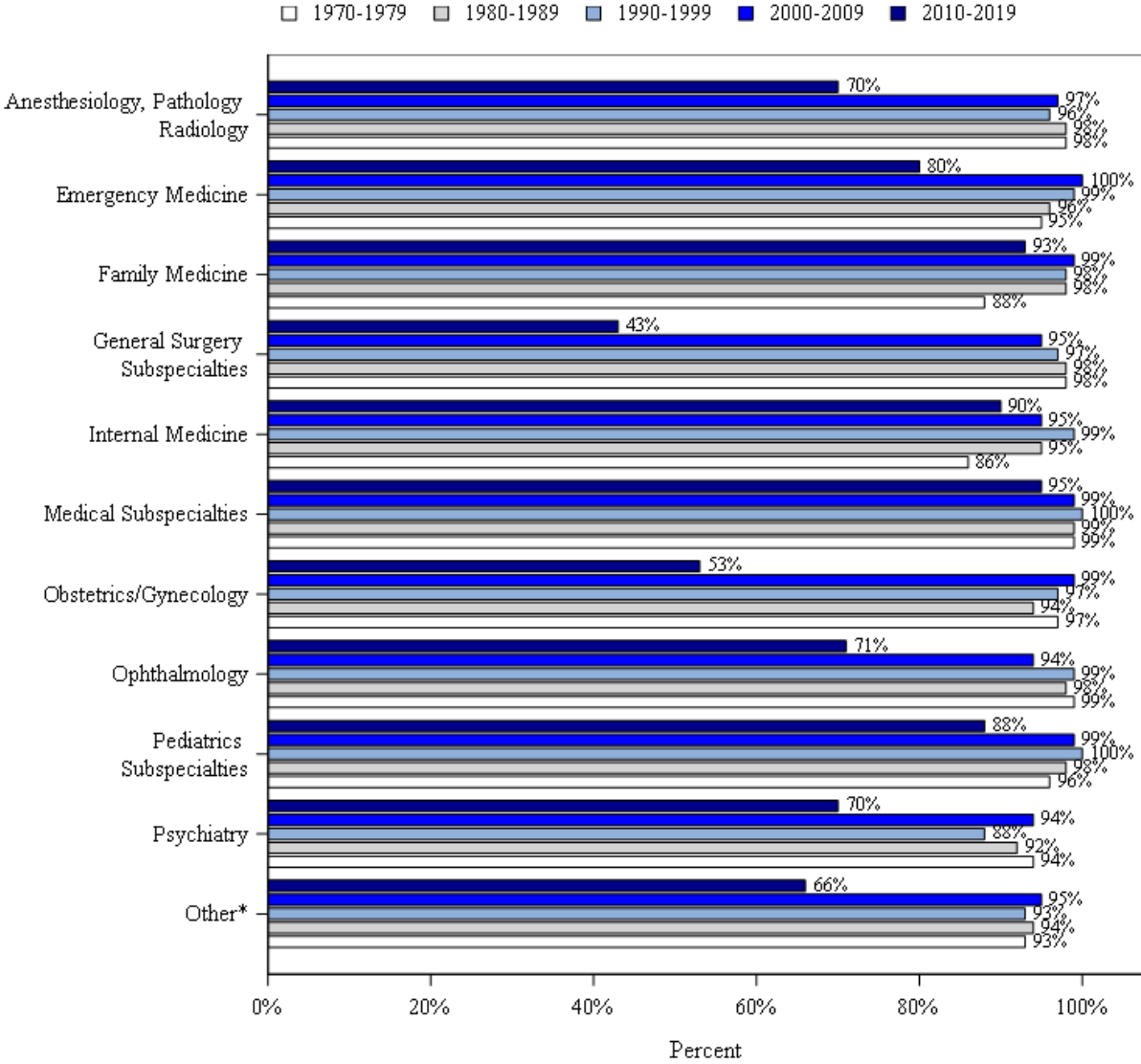
Program directors rated the graduates on Yes, No scale comparing them with all graduates they ever supervised. See Section VIII of the postgraduate rating form on page 40 of this report.

Exhibit 19
Specialties of Alumni*
Graduating Classes of 1970-2018



*"Other" includes 51 specialties and subspecialties, each representing 5% or less than the total alumni.
 Source: American Medical Association, American Board of Medical Specialties.

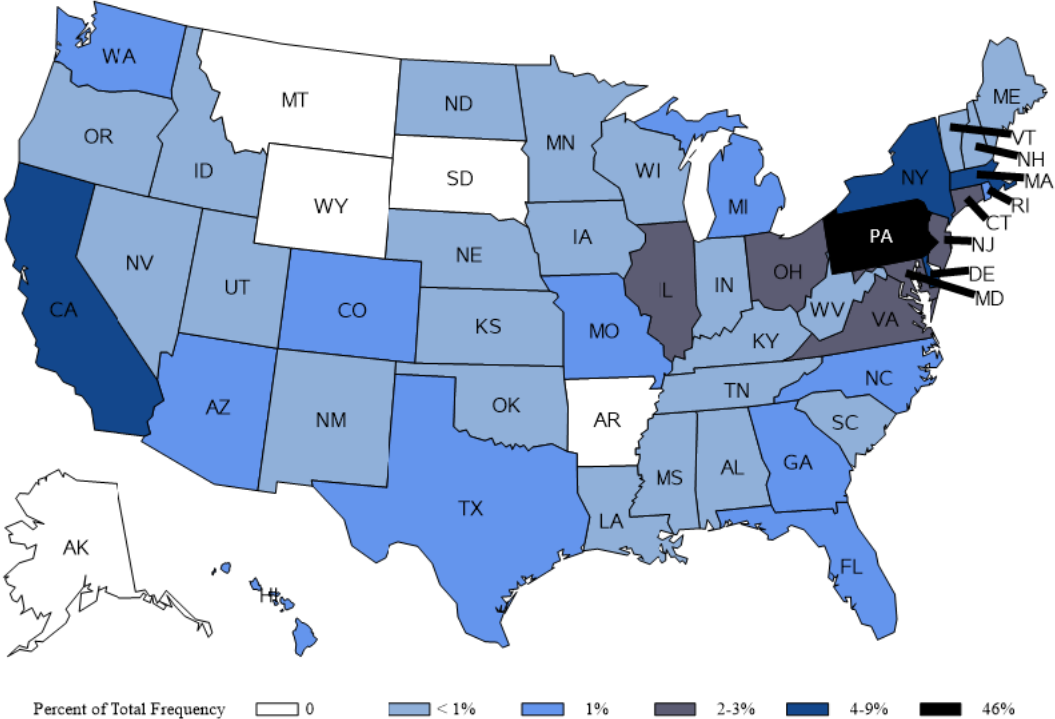
Exhibit 20
Board Certification of Alumni by Specialty*
Graduating Classes of 1970-2019



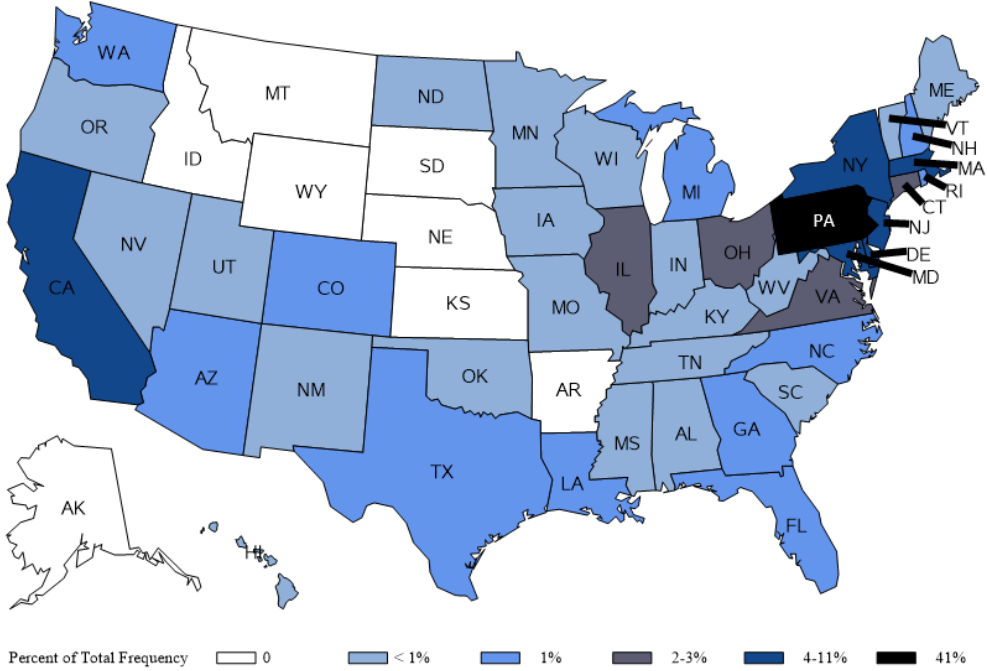
Percentages are based on the total graduates in each specialty.
 ***Other** includes 47 specialties and subspecialties, each representing 5% or less of the total alumni.
 Source: American Medical Association.

Exhibit 21
Current Location of Living Alumni

Classes of 1970-2017



Graduating Classes of 2007-2017



Postgraduate Rating Form



Asano-Gonnella Center for Research in Medical Education and Health Care

POSTGRADUATE RATING FORM

I. Please rate the resident in each of the following items by circling the appropriate number. In making the ratings please compare this resident with all residents you have supervised, not just with those in your recent group.

	Top Quarter	Upper Middle Quarter	Lower Middle Quarter	Bottom Quarter	Insufficient Information to Judge
1. Attention to collection of data related to health risks	4	3	2	1	X
2. Collection of history of the present illness from the patient or family	4	3	2	1	X
3. Ability to communicate effectively with patients and their families	4	3	2	1	X
4. Ability to act effectively in an emergency	4	3	2	1	X
5. Competence in performing physical examination	4	3	2	1	X
6. Willingness to ask for help when needed	4	3	2	1	X
7. Attention to psychological and emotional factors related to the patient's health	4	3	2	1	X
8. Use of literature in diagnosis and treatment	4	3	2	1	X
9. Documentation of reasons for obtaining laboratory data	4	3	2	1	X
10. Counseling patients about preventive care and wellness	4	3	2	1	X
11. Thoroughness of differential diagnosis	4	3	2	1	X
12. Awareness of socio-psychological factors affecting patient's condition	4	3	2	1	X
13. Ability to handle anxiety-producing situations	4	3	2	1	X
14. Adherence to professional ethical standards	4	3	2	1	X
15. Knowledge of basic science areas most closely related to postgraduate program	4	3	2	1	X
16. Judgment in implementing care	4	3	2	1	X
17. Effectiveness as a teacher of medical students and/or other health professionals	4	3	2	1	X
18. Willingness to admit an error in judgment	4	3	2	1	X
19. Willingness to proceed independently when appropriate	4	3	2	1	X
20. Relationships with other health care personnel	4	3	2	1	X
21. Thoroughness in collection of pertinent past history of the patient	4	3	2	1	X
22. Thoroughness and organization of medical records	4	3	2	1	X
23. Collection of the patient's family history	4	3	2	1	X
24. Thoroughness in obtaining information from patients or families related to the patient's chief complaint	4	3	2	1	X

II. Please rate the resident's overall performance in the following areas:

1. Knowledge	4	3	2	1	X
2. Data-Gathering Skills	4	3	2	1	X
3. Clinical Judgment	4	3	2	1	X
4. Professional Attitudes	4	3	2	1	X

III. If one assumes that a physician serves not only as a clinician, but also as a patient educator and a manager of health care resources, how would you rate this resident in these areas:

1. Clinician	4	3	2	1	X
2. Patient educator	4	3	2	1	X
3. Manager of health care resources	4	3	2	1	X

Please see other side~

IV. How do you rate this resident's **empathetic behavior** (defined as an understanding of the patients' inner experiences and perspective, and a capability to communicate this understanding) on the following 10-point scale:

Not empathetic at all Very empathetic all the time
1.....2.....3.....4.....5.....6.....7.....8.....9.....10

V. Does your hospital offer a program in this resident's specialty?

Yes-If Yes, was this resident offered further postgraduate training at your hospital? Yes No.

No-If No, if your hospital had a program in this specialty, would he or she have been offered a place at your institution? Yes No.

Other, please comment _____

VI. Was the resident's performance consistent with the hospital's expectation at the time of acceptance?

Yes, (describe) _____

No, (describe) _____

VII. Was the dean's letter of recommendation predictive of the resident's performance?

Yes, (describe) _____

No, (describe) _____

VIII. Does this resident have qualities you would like to see in your own physician?

Yes, (describe) _____

No, (describe) _____

Thank you again for your help with this IRB approved evaluation.
If you have any questions concerning this form, or suggestions for improvement, please contact:

Mohammadreza Hojat, PhD - (215) 955-9459
(Mohammadreza.Hojat@jefferson.edu)

Please return this form to:
Center for Research in Medical Education and Health Care
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