



SIDNEY KIMMEL MEDICAL COLLEGE

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

ANNUAL REPORT | 2024 — 2025

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

Annual Report
Academic Year 2024-2025

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Thomas Jefferson University**

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Message from the Executive Director, Charles A. Pohl, MD

The Asano-Gonnella Center for Research in Medical Education and Health Care has had another productive and impactful year, serving the medical college and scholars at Jefferson and around the world.

The Jefferson Longitudinal Study began in 1970 by Dr. Joseph Gonnella, to monitor the quality of the educational programs at the medical college, assess their educational outcomes and ensure that their education goals have been met. Its impact on medical education is unparalleled and is recognized as a tour de force in medical education research, culminating in over 200 peer-reviewed publications.

The Jefferson Scale of Empathy (JSE), under the stewardship of Dr. Mohammadreza Hojat, has continued to receive wide recognition. It has been used by over 2,500 researchers in 94 countries around the world, with translation into 64 languages and citations in more than 680 publications by national and international researchers in peer-reviewed journals (in English).

The Center faculty and staff have been instrumental in numerous initiatives to the medical college including, but not limited, assessment of the early assurance programs, evaluation of the tool to assess respect and teaching effectiveness of the faculty and residents, and use of ChatGPT to create national board-like questions.

In addition, the Center has been actively publishing the results of their health services and educational research, with both international and local collaborators. The Maio criteria, developed to evaluate the prevalence and predictors of potentially inappropriate medications among elderly patients, continues to be used in the Parma Local Health Authority, Italy.

The CRMEHC continues to have a far-reaching impact both nationally and internationally on health care and medical education. For example, Dr. Mohammadreza Hojat received a \$250,000 grant from the American Association of Colleges of Osteopathic Medicine (AACOM) to conduct a landmark nationwide longitudinal study on changes in clinical empathy as students progress through medical school. He was also nominated for and received the Lifetime Achievement Award for his research in clinical empathy from the Stoneygate Centre for Empathic Healthcare at Leicester Medical School, College of Life Sciences, University of Leicester in the U.K. Dr. Rosie Frasso once again directed The Qualitative Institute, which attracted national representatives from academic institutions, non-profit organizations, and government agencies. Drs. Vittorio Maio and Aaron Douglas continued their collaborations with national and international researchers, resulting in several guest lectures and groundbreaking publications.

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 2024, the Jefferson Longitudinal Study database comprises academic and career outcome data for 14,741 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 214 research studies based on the Jefferson Longitudinal Study have been published in peer-reviewed journals. A list of publications is available on our website: [jls-publications-091625.pdf](https://www.jefferson.edu/medical-education/publications-091625.pdf)

In a book published in 2022 by Springer: “*Fifty years of findings from the Jefferson Longitudinal Study of Medical Education*” the abstracts of 204 articles from the Jefferson Longitudinal Study that had been published in peer-reviewed professional journals were assembled (Accessible from: <https://doi.org/10.1007/978-3-030-85379-2> in peer-reviewed journals).

Medical Education Research

Specific projects include:

- Dr. Douglas collaborated with Dr. Anita Wilson in the Sidney Kimmel Medical College, Department of Undergraduate Medical Education and Dr. John Spandorfer, Associate Dean of Medical Education, for a research study that was intended to validate the JeffRATE educator evaluation form. The evaluation form is an assessment instrument that medical students use to rate the level of respect and teaching effectiveness the educators (i.e., faculty and residents) demonstrate toward the students and other staff during the students’ clinical clerkship rotations. This research study resulted in a publication published in June of 2025 in the journal of Academic Medicine.
- Dr. Douglas collaborated with Dr. Wayne Bond Lau (Professor of Emergency Medicine and Assistant Dean of Student Affairs), Dr. Alisa LoSasso, Professor of Clinical Pediatrics and Vice Dean for Admissions, Dr. Katherine Berg, Associate Dean of the University of Medical Education, Office of Assessment and Dr. Anita Wilson, Senior Psychometrician, Sidney Kimmel Medical College, Department of Undergraduate Medical Education, for research undertaken to evaluate the effectiveness of Early Assurance Programs, which are alternate pathways taken by high-performing undergraduate college students to satisfy the Sidney Kimmel Medical College admission requirements. The primary research finding supports the utilization of the Early Assurance Programs since the data shows that Sidney Kimmel Medical College students entering via Early Assurance Programs perform at the same levels (on key academic achievement measures during medical school, such as USMLEs) as matched Sidney Kimmel Medical College students that entered by way of the traditional admissions process. A manuscript for a peer-reviewed publication on this research was submitted and is undergoing revision.
- Dr. Douglas has been collaborating with Dr. Alexander Macnow, Assistant Professor, Division of Anatomy Education and Dr. Elizabeth Spudich, Assistant Professor & Chief in the Anatomy Education Division, Department of Medical Education, for a study that is an investigation of the effectiveness of using ChatGPT for authoring assessment items that are similar to items on the USMLEs. For this study, the researchers compared items they created by ChatGPT to items authored by human subject-matter experts. The two sets of items were comparable in terms of content topic coverage and cognitive complexity, and both were administered to samples of students in a way that controlled for variation of student academic achievement. The two sets of items (i.e.,

ChatGPT-generated and human-authored) were compared in terms of their psychometric characteristics. The research findings provide evidence that supports use of ChatGPT, in conjunction with efforts by human authors, for the creation of assessment items.

- 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. Findings from the study show that new MCAT total scores have the same level of predictive power for student performance on the USMLEs. However, although new MCAT section scores have predictive power for student performance on the USMLEs, the predictive relationships differ between male and female students. This research study resulted in a publication published in April of 2025 in the journal of Teaching and Learning in Medicine.
- Dr. Douglas has started research for a second study on the validity of the new MCAT for predicting student performance on USMLE Step 1. The purpose of this study is to demonstrate the use of the Heckman selection model within a path analysis framework. MCAT data from applicants to SKMC will function as the predictor variables while USMLE Step 1 data from those applicants who ended up studying at Sidney Kimmel Medical College will function as the criterion variable. This study will demonstrate how the Heckman selection model can be used when the criterion variable is censored due to selectivity of the admissions process. Estimates of the predictive value of the new MCAT scores would then be generalizable for all applicants, including applicants with missing USMLE Step 1 data because they never attended Sidney Kimmel Medical College.
- Center faculty produced the annual report on students' class positions for consideration for Alpha Omega Alpha eligibility for the senior year (for the class of 2025), as well as data visualizations of the 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 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.

- Dr. Douglas is collaborating on a research study with Dr. Aaron Kendrick, who is a recent Sidney Kimmel Medical College alumni and is currently in residency at the University of Pittsburgh Medical Center. Dr. Kendrick initiated this study as a Scholarly Inquiry project during his undergraduate medical education studies at Sidney Kimmel Medical College. The purpose of the study is to investigate for differences in “ideal physician traits” between students pursuing in humanities research versus students pursuing traditional medical research at Sidney Kimmel Medical College. A manuscript for this study will be submitted for publication in a leading journal.
- In response to a request from Dr. Benard L. Lopez, who is the Senior Associate Dean for Diversity and Community Engagement, Dr. Douglas helped in the creation of Sidney Kimmel Medical College inclusion metrics by leveraging data from the AAMC Graduation Questionnaire. Dr. Douglas advised Dr. Anita Wilson as she conducted the recommended data analyses and created data visualizations 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 64 languages and used in 94 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 64 articles published by Hojat et al.: [jls-publications-](#)

[091625.pdf](#), publications by national and international researchers appeared in peer-reviewed journals (in English) in which the JSE was used. Over 680 articles are listed at the following link: [jefferson-scale-empathy-bibliography-091225.pdf](#)

Dr. Hojat was invited by the American Association of Colleges of Osteopathic Medicine (AACOM) to wrap-up Phase II of the Project in Osteopathic Medical Education and Empathy (POMEE), a landmark nationwide longitudinal study of changes in clinical empathy as students progress through medical school (from preclinical to clinical phase of medical school education). The study cohort included 5669 matriculants who entered U.S. colleges of osteopathic medicine in 2019-2020 academic year and were followed up from matriculation to graduation. Data collected from the beginning to the end of medical school education will be analyzed to examine positive or negative changes in clinical empathy in the study cohort, and associations of changes in clinical empathy with demographic variables, attitudes toward osteopathic medicine, emotional empathy, orientation toward interprofessional collaboration, lifelong learning, and burnout experiences will be addressed in univariate and multivariate statistical models. Also, reasons for changes in clinical empathy will be explored in this groundbreaking project.

Dr. Hojat completed revising and updating the third edition of his empathy book under a new title: “Clinical Empathy: The Heart of Patient Care” which is an expanded and updated edition of his 2016 book. The new edition is scheduled to be released in 2025 by Springer.

Dr. Hojat was nominated and selected as the winner of the Lifetime Achievement Award for his research in clinical empathy by the Stoneygate Centre for Empathic Healthcare, Leicester Medical School, College of Life Sciences, University of Leicester, in U.K. The award will be given to him at the Global

Empathy in Healthcare Network Symposium 2025, in September 2025 at the University of Leicester, U.K.

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 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_farmac/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.

To respond to citizens' health needs and implement innovative pro-active clinical programs for specific population groups sharing a homogeneous level of complexity, the Parma Local Health Authority asked Center researchers (PI: Dr. Maio) to collaborate on a 2-year project to develop and validate an instrument for the stratification of the population based on the health risk of patients using health data of primary care physicians. For the first phase of the project, using expert consensus-seeking techniques, Center researchers collaborated with a multidisciplinary expert panel of the Parma Local Health Authority to identify have been presented at the 2025 International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Annual International

Meeting, and then published in *BMC Primary Care*.

Center researchers have an ongoing collaboration with the College of Nursing of Villanova University and the School of Nursing of Rutgers University 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). Preliminary results of this study have been presented at the 2025 Academy of Managed Care Pharmacy (AMCP) Annual Meeting and at the 2025 ISPOR Annual International Meeting,

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 published in the *American Journal of Medical Quality*.

In collaboration with the Department of Radiation Oncology, Dr. Wenyin Shi and the Department of Neurological Surgery, Dr. Iyad Alnahhas, 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. Preliminary findings have been presented at the 2025 ISPOR International Meeting and at the 2024 Society for Neuro-Oncology's 29th Annual Meeting and Education Day.

A collaborative research initiative has started with the Department of Urology (Dr. Costas Lallas) to conduct a comparative analysis of robotic-assisted laparoscopic surgery for radical nephrectomy, as well as for partial nephrectomy in renal cancer

patients. Preliminary findings about the radical nephrectomy study have been presented as podium presentation at 2024 Annual Meeting of the Mid-Atlantic Section of the American Urological Association, and as a poster presentation at the 2025 ISPOR Annual International Meeting. Preliminary findings about the partial nephrectomy study have been presented at the 2025 AMCP Annual Meeting and at the 2025 ISPOR Annual International Meeting. In addition, preliminary results of a cost-effectiveness analysis of robot-assisted and laparoscopic radical nephrectomy versus open radical nephrectomy in the treatment of renal cell carcinoma have been presented the 2025 ISPOR Annual International Meeting.

Center researchers have collaborated with investigators from Università Cattolica del Sacro Cuore, Roma, Italy, on a study to examine the effectiveness of leading Large Language Models (LLMs) in providing information on infection control and antibiotic use. Preliminary findings have been accepted as podium presentation at the 18th European Public Health Conference 2025.

Center researchers have collaborated with investigators from Università Cattolica del Sacro Cuore, Roma, Italy, on a study aimed to examine long-term, state-level trends in influenza vaccination coverage in the US among adults aged ≥ 65 years across fifteen influenza seasons (2009/10—2023/24), with particular attention to the effects associated with the COVID-19 pandemic.

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. Dr. Frasso continues to work 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 Drs. Nethra Ankum, Derman, Thind, O'meara, Hagenbaugh, Lisco, Salzman, Sicks Papanagnou, Fernandez, Miller, James and Zhang on a variety of projects designed to understand the experiences of community health workers, patients, community members, learners and trainees.

In fall of 2023, Dr. Frasso launched The Qualitative Huddle, a monthly space where qualitative researchers and those interested in qualitative work come together to learn new skills, share experiences, and ask questions of one another. Now in its third year, each session draws attendees (25 to 50) from across the Jefferson Health System and from Jefferson's many colleges.

The Qualitative Institute, a 3-day mini course, directed by Rosie Frasso, for over 15 years, was held in September of 2025. The event brought experts together from Thomas Jefferson University, The University of Pennsylvania, Drexel University, Temple University and the Children's Hospital of Philadelphia (CHOP). The attendees came from around the U.S., and represented academic settings, non-profit organizations and government agencies as well as researchers focused on tribal health.

Teaching

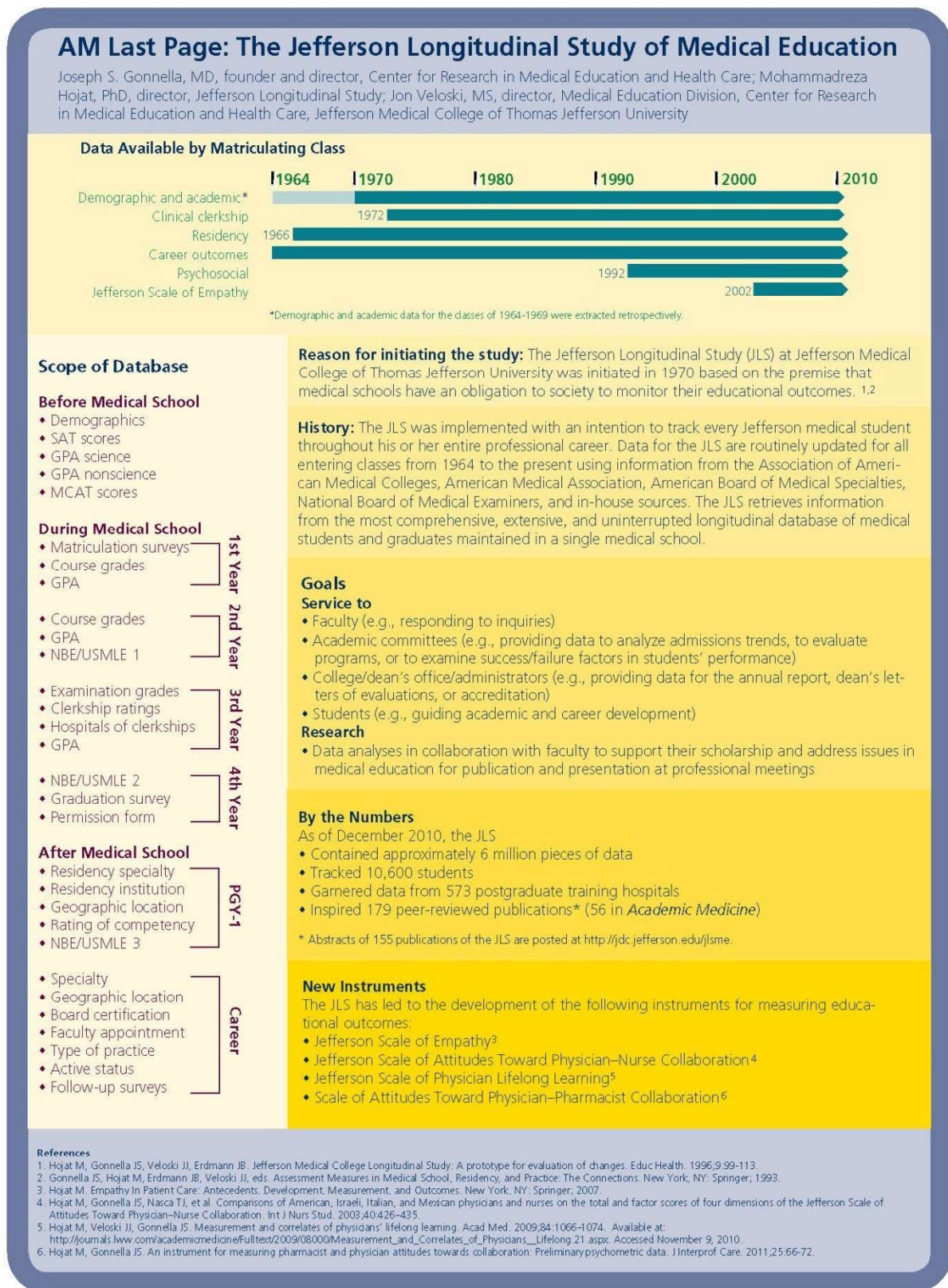
Center Faculty teach a series of lectures in the phase one curriculum including lectures on the Social Drivers of Health (SDOH), Public Health, and Research Design. Additionally, Center faculty collaborate with the Megan Voeller, Sidney Kimmel Medical College, to run the Community Voices Series and accompanying journal club for students. The series provides students 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 Università Cattolica del Sacro Cuore, Roma, Italy, the University of Pisa, the University of Parma, Italy, 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 remote training for learners in India and onsite training for students visiting from KLE University in Belagavi, India. Center faculty provided training to the 25-26 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. Carolina Castagna, Mumbi Kimani, Manisha Li, and Lucas Philip, 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 doctoral students from the School of Nursing, the College of Population Health and from the SMART Lab PhD program 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.

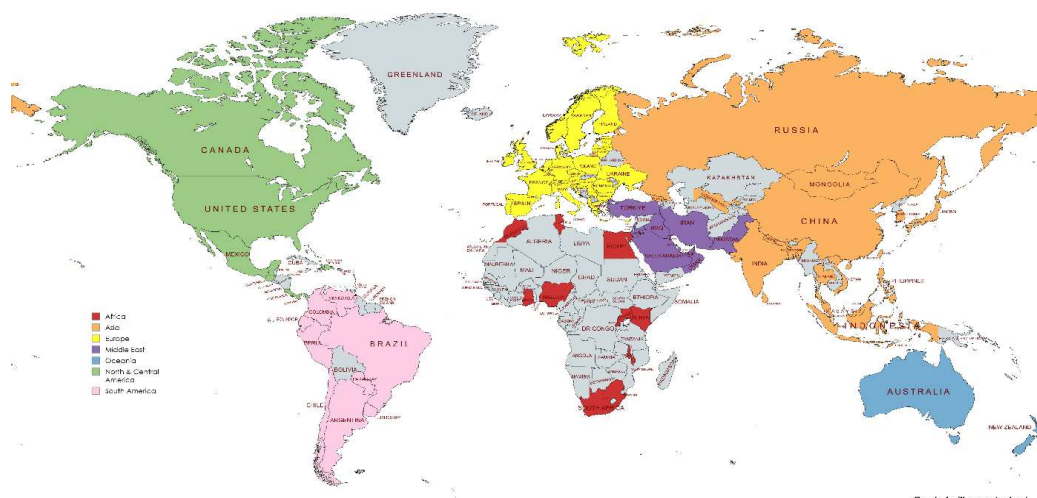
With the goal of supporting international education at Jefferson, through a partnership with Università Cattolica del Sacro Cuore, Roma, Italy, Dr. Maio was named the Jefferson recipient of 3-year Erasmus+ for Higher Education grant funded by the EU Program (8/1/2023-7/31/2026). The grant supports an 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



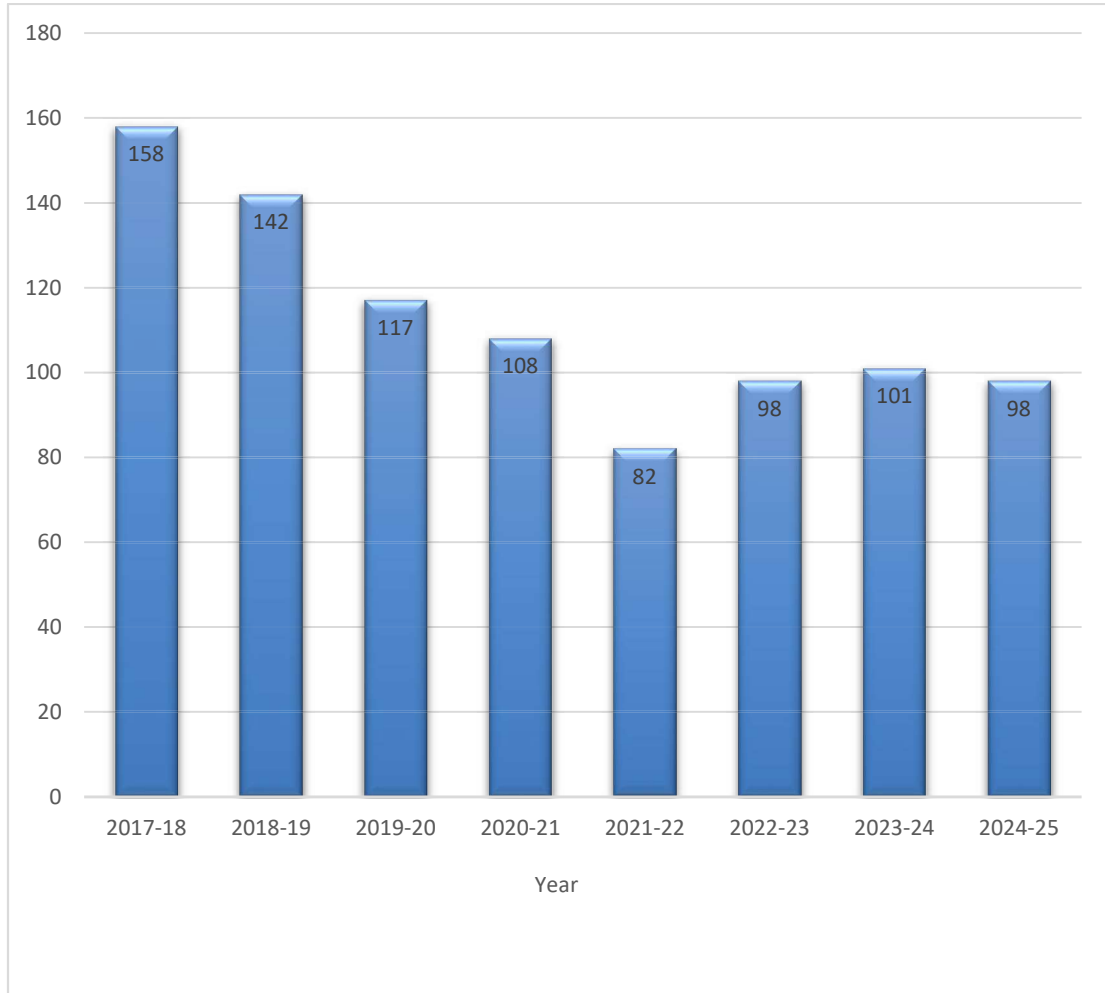
Created with mapchart.net

| | | | | |
|--|--|---|--|---|
| Africa: Egypt Ghana Kenya Malawi Morocco Nigeria Rwanda South Africa Tunisia Uganda | Philippines Russia Singapore South Korea Sri Lanka Taiwan Thailand Uzbekistan Vietnam | France Germany Greece Hungary Ireland Italy Latvia Lithuania Norway Poland Portugal Romania Scotland Serbia Slovenia Spain Sweden | Ukraine United Kingdom Middle East: Iran Iraq Israel Jordan Kuwait Oman Lebanon Pakistan Qatar Saudi Arabia Turkey United Arab Emirates | Canada Costa Rica Guatemala Dominican Republic Haiti Mexico Panama St. Maarten Trinidad & Tobago United States |
| Asia: Bangladesh China Georgia Hong Kong India Indonesia Japan Malaysia Mongolia Nepal | Europe: Albania Austria Belgium Bulgaria Croatia Czech Republic Cyprus Denmark England Estonia Finland | Switzerland The Netherlands | Oceania: Australia New Zealand Americas: North/Central | South America: Argentina Brazil Chile Columbia Ecuador Paraguay Peru Uruguay Venezuela |

| Translations of the Jefferson Scale of Empathy | | | | |
|--|-----------------|------------------------|--------------------|------------------------------|
| Albanian | Belgium | Hindi | Portuguese | Mexico |
| Arabic | The Netherlands | Hungarian | Portugal | Panama |
| Moroccan (Darija) | Estonian | Indonesian | Brazil | Peru |
| Bengali | Filipino | Italian | Romanian | Spain |
| Bulgarian | Finnish | Japanese | Russian | Swedish |
| Chinese | French | Korean | Serbian | Tagalog (Philippines) |
| Simplified | Belgium | Latvian | Sinhalese | Tamil (India) |
| Mainland | France | Lithuanian | Slovenian | Tamil (Sri Lanka) |
| Taiwan | Canada | Malaysian | Spanish | Thai |
| Croatian | Switzerland | Mongolian | Argentina | Turkish |
| Czech | German | Nepali | Catalan | Ukrainian |
| Danish | Greek | Norwegian | Chile | Urdu |
| Dutch | Hebrew | Persian (Farsi) | Dominican Republic | Uzbek |
| Flemish | | Polish | El Salvador | Vietnamese |

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 has served as the Chair for the Group of Student Affairs (GSA) for the Association of American Medical Colleges (AAMC), the Chair of the AAMC GSA Medical Student Performance Evaluation Effective Practices Working Group, and 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.

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Dr. Douglas completed his graduate-school training at 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. Dr. Douglas also provides research methodology support for other departments and several faculty in the medical college. His work supporting the medical college has resulted in several medical education research publications. His future additional research activities will feature the use of his data scientist skills for a large-scale survey research project that will utilize the Jefferson Scale of Empathy and other questionnaires that measure non-cognitive competencies critical for effective practice of medicine. He also manages the Longitudinal Study database with a focus on tools that automate and innovate the annual reporting of this important data.

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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 Wills Eye Hospital, the Philadelphia Department of Public Health, the Federal Reserve Banks of Chicago and Philadelphia, LV Prasad Eye Institute and KLE University 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, free listing 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 serves as a reviewer for several other journals.

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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.

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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 2nd updated and expanded edition under a new title, "Empathy in Health Professions Education and Patient Care" was released in 2016.

The 3rd edition of the book "*Clinical Empathy: The Heart of Patient Care*" is scheduled to be released by Springer in 2025.

**Vittorio Maio, PharmD, MS, MSPH,
PharmD, MS, MSPH, Managing Director,
Director, Health Services Research**

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Tel: 215-955-1821

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 Director for

European Grants of the Italy Center and the Jefferson Global Engagement Program. Dr. Maio's research interests are in the areas of outcomes analysis, comparative effectiveness research, economic evaluation, and medication usage and policy. He has published more than 60 papers in peer-reviewed journals and presented his research at many national and international conferences. His research has received extensive funding from national and international institutions, focusing mainly on the appropriateness of medication prescribing and the quality of care in both inpatient and outpatient settings. He is Associate Editor of the *American Journal of Medical Quality* 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 Master's 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.

Research Staff

**Jennifer DeSantis, M.Ed., Senior Research
Study Analyst**

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Tel: 215-503-6087

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

Shira A. Carroll, BA, Administrative Assistant

Shira.Carroll@jefferson.edu

Tel: 215-955-9458

Since 2015, Shira Carroll has been the Administrative Assistant to the Center and to Vittorio Maio, Managing Director, and serves as the Project Coordinator for the Jefferson Empathy Project. Her responsibilities include handling inquiries from researchers worldwide regarding requests for permission, and resources for the use of the Jefferson Scale of Empathy and the 11 Jefferson assessment scales. She maintains a database of users and translations. She also provides administrative support to Dr. Charles Pohl, Director of the Center, and 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,
Professor of Biostatistics, Division of
Biostatistics and Bioinformatics**

Scott.Keith@jefferson.edu

Tel: 215-503-9876

Scott W. Keith is Professor of Biostatistics in

the Division of Biostatistics and Bioinformatics. 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*. 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. Dr. Keith is collaborating with Center faculty and staff on several healthcare services research projects.

**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.

Visiting Scholars

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

Alawi Alsheikh-Ali, MD

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Dean, College of Medicine
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Chairman, The Board of Directors

Japan Association for Development of

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Teaching and Other Professional Activities

Publications

Ali CR, Litvintchouk AM, Moeller P, Davis R, Hannan E, **Maio V**, Csik VP. Depression and Distress Screening in Oncology Patients: A Descriptive Analysis. *American Journal of Medical Quality* 2025;40(1):1-7 DOI: 10.1097/JMQ.0000000000000212

Castagna C, Huff A, **Douglas A**, Garofano M, Fabi M, Hass R, **Maio V**. Stratifying the population based on health risk: identification of patient key health risk factors through consensus techniques *BMC Primary Care* 2025;26:229. <https://doi.org/10.1186/s12875-025-02923-w>

Douglas A, LoSasso A Alfonsi, L, Bernard L, **Pohl C**, Wilson A, **Hojat M**. Comparisons of Validity of the New and Prior MCAT Exams in Predicting Performances on Steps 1, 2, and 3 of the United States Medical Licensing Examinations. *Teaching and Learning in Medicine*, 2025, p.1-9 <https://doi.org/10.4081/itjm.2023.1676>

Flax VL, Rizvi N, Charantimath U, Jassani S, Kavi A, Sallem S, Somannavar M, Goudar SS, Hannan A, McClure EM, Thing S, **Frasso R**, Derman R. PRIORITY IR: Protocol for implementation research on single-dose postpartum IV iron to treat iron-deficiency anemia among women in India and Pakistan [version 1]. *VeriXiv*

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Granda-Cameron C, **Frasso R**, Robles-Rodriguez E, et al. Hispanic Breast Cancer Survivors Share Their Perceptions About Endocrine Blocking Therapy Adherence. *JNHMA*. 2024;2(2):50-64. doi:10.59867/nhma0404

Nachira L, Arcaro P, Pattavina F, Campo E, Castagna C, **Frasso R**, Cadeddu C, Bruno S. Perceived relevance of Planetary Health for Medical Students in Italy: results from a mixed-methods analysis. *Public Health in Practice*, 2025,100607, ISSN 2666-5352 <https://doi.org/10.1016/j.puhip.2025.100607>.

Snyder NP, Olonilua BO, **Frasso R**, Croce J, Papanagnou, D. Communicating with Deaf Patients in the Clinical Environment through Deaf-Hearing Teams: Lessons Learned from a Virtual Patient Panel. *MedEdPublish* 2025, 14:218. <https://doi.org/10.12688/mep.20608.2>

Vaile J, Doran C, Maheu AR, Jaramillo V, Perez-Chadid DA, Fernandez T, Walkosak C, Roll Velez D, Bedoya Osorio SC, Seebadri-White C, Troung S, Papanagnou D, Fernandez A, **Frasso R**. Design and Validation of a Cross-Cultural Virtual Exchange Experience Among Bilingual Medical Students: A Qualitative Study. *Frontiers in Medicine (in press)*.

Voeller M, **Pohl CA**. A novel for-credit DEI humanities co-curriculum. *Medical Education*, 2024, 58(5):645-645. DOI:10.1111/medu.15358

Wilson AM, **Douglas A**, Spandorfer JM. MD. Reliability and Validity of the Respect Factor in Student Evaluations of Clinical Educators. *Academic Medicine* 100(6):p 705-709, June 2025. DOI: 10.1097/ACM.0000000000006001

Wilson AM, Berg K, **Douglas A**, Caruso J, Diemer G, Day K, **Frasso R**, Herrine SK, Abraham D. Closing the Communication Gap: Assessing the Alignment Between UME and GME Competencies. *Am J Med Qual*. 2025 Sep-Oct 01;40(5):235-242. doi: 10.1097/JMQ.0000000000000254. Epub 2025 Jun 12. PMID: 40505090.

Presentations

Burtis E, **Frasso R**. Exploring raw milk discourse on social media, APHA Annual Meeting and Expo, Minneapolis, MN, October 27-30, 2024

Castagna C, Huff A, **Douglas A**, Garofano M, Fabi M, Hass R, **Maio V**. Development of a Tool for Population Health Risk Stratification in Primary Care Through Consensus-Seeking Techniques. 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 16, 2025

Di Pumpo M, Gualano MR, Buonsenso D, Raffaelli F, Donà D, **Maio V**, Laurenti P, Ricciardi W, Villani L. Large language models to reduce antimicrobial resistance: ChatGPT, Claude and Gemini comparison. Accepted at the 18th European Public Health Conference 2025 in Helsinki, Finland. November 11-14, 2025

Fennessey A, Hunter L, Remshiski P, Okatch, H., Campbell, H, Barnoy S.,Friedman J., Kern S, **Frasso R**, Sorensen C, Zaltz Y. and Bar-Shalita T. (2025). Climate Change and Its Impact on Health: A Global Collaborative Learning Model. Poster Presentation at the Consortium of Universities for Global Health: Atlanta, Georgia, Feb 2025

Fennessey A, Hunter L, Remshifski P, Okatch H, **Frasso R**, Kern S, Campbell H, Zaltz Y, Barnoy S, Friedman J, & Shalita T. (2024). Climate Change and its Impact on

Health: A Global Interprofessional Learning Experience. Thomas Jefferson University Faculty Days –Podium Presentation

Francies A., Keys M., **Frasso R.**, Bryom-Haley, E. Challenging Expectations & Inspiring Empathy: Presenting Perspectives in the Unhoused Exhibit. Mid-Atlantic Association of Museums (MAAM) Annual Meeting. Philadelphia, PA, October 8-10, 2024

Frasso R. Qualitative Research, Università Cattolica del Sacro Cuore, Rome, Italy, September, 2025

Frasso R., Van Orsdol Z, Medicine and Public Health, the Benefits of Dual Training. APTR, Cleveland, Ohio, March 2025

Frasso R., DiSantis K, Van Orsdol Z, Thind S, Voeller M., Everybody had a Story: Community Voices – Amplifying Voices with Student Moderated Panels. APTR, Cleveland, Ohio, March 2025

Heilizer JS, Matsubara J, Manning A, Harris R, Kozlowski B, Wilson S, Eddy G, Nega A, Zhang A, Arunkumar N, **Frasso R.** JeffHOPE: A Qualitative Investigation into Barriers to Care in People Experiencing Homelessness in Philadelphia. Poster presentation at Society of Student-Run Free Clinics Annual Conference, Chicago, IL, October 2025

Huang D, Lallas CD, Davis R, Ghosh A, Moeller P, Keith SW, Kim I, **Maio V.** Comparative Analysis of Robotic-Assisted, Laparoscopic, and Open Radical Nephrectomy: Trends, Costs, and Clinical Outcomes. 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 14, 2025

Kimani ME, Castagna C, Kim I, Huang D, Lallas CD, **Maio V.** Cost-Effectiveness of Robot-Assisted and Laparoscopic Radical Nephrectomy versus Open Radical Nephrectomy in the Treatment of Renal Cell Carcinoma. 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 16, 2025

Lallas CD, Huang D, Davis R, Hochberg A, Im B, Ghosh A, Moeller P, Kim I, Keith SW, **Maio V.** A contemporary analysis of use, clinical outcomes, and costs of robotic-assisted, laparoscopic, and open radical nephrectomy using the National Inpatient Sample. 2024 Annual Meeting of the Mid-Atlantic Section of the American Urological Association, White Sulphur Springs, WV, September 7, 2024

Lin M, Kimani ME, Lallas CD, Davis R, Ghosh A, Moeller P, Keith SW, **Maio V.** A contemporary analysis of use, clinical outcomes, and costs of robotic-assisted, laparoscopic, and open partial nephrectomy using the National Inpatient Sample. AMCP Annual Meeting, Houston, TX, April 3, 2025

Lin M, Kimani ME, Lallas CD, Davis R, Ghosh A, Moeller P, Keith SW, **Maio V.** A contemporary analysis of utilization, clinical outcomes and costs of robotic-assisted, laparoscopic, and open partial nephrectomy using the National Inpatient Sample. 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 15, 2025

Maio V. The US healthcare system: an overview. Università Cattolica del Sacro Cuore, Rome, Italy. June 10, 2025

Mettla AL, Kim I, **Maio V.** Marmamula S, Khanna R. Cost analysis of school vision screening programs: Children eye Health Initiative of Krishna District, South India. 2025 International Agency for the

Prevention of Blindness (IAPB),
Kathmandu, Nepal, May 1, 2025

Philip L, Moeller P, Keith SW, **Maio V**, Davis R, Pogorzelska-Maziarz M. Assessing Infection Prevention Staffing and Resource Allocation Across Single and Multi-Facility Hospitals: A Comparative Analysis. 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 16, 2025

Philip L, Moeller P, Keith SW, **Maio V**, Davis R, Pogorzelska-Maziarz M. Infection Prevention and Control Staffing Across Free-Standing and Multi-Facility Systems: Insights from a National Study. AMCP Annual Meeting, Houston, TX, April 3, 2025

Shah R, Lin M, Moeller P, Keith SW, Alnahhas I, Hass R, Shi W, **Maio V**. Metformin Exposure and Survival in Glioblastoma: A Large Population Study 2025 International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, Montreal, Canada, May 16, 2025

Shah R, Moeller P, Keith SW, Hass R, Shi W, **Maio V**, Alnahhas I, A SEER-Medicare Analysis of Exposure to Commonly Used Medications and 1-Year Survival in Glioblastoma. 2. 2024 Society for Neuro-Oncology's 29th Annual Meeting and Education Day, Houston, TX, USA, November 21, 2024

Teaching

Rosemary Frasso, PhD, CPH

Director, Mixed Methods Research

Master of Public Health:
Qualitative Research, Capstone Course

SKMC: Social Drivers of Health
Population Health and Public Health
Research Methods for SI Students

Co-taught Pandemics Course

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

Associate Editor

- *European Journal of Public Health*

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

- Delta Omega – Public Health National Honorary Society
- Associate Editor, *American Journal of Medical Quality*
- Associate Editor, *Italian Journal of Medicine*
- Grant Reviewer, *Italian Ministry of Health*

Reviewer

- *Advances in Health Sciences Education*
- *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*
- *European Journal of Public Health*
- *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*
- *PLoS ONE*
- *Population Health Management*
- *Psychiatric Services*
- *Quality in Primary Care*
- *Scientific Reports*
- *The Joint Commission Journal on Quality and Patient Safety*

Charles A. Pohl, MD

Memberships

- National GHHS Advisory Council, Nomination Subcommittee
- AAMC Group on Student Affairs
- College of Physicians of Philadelphia
- Executive Director, Jefferson Japan Center Advisory Committee, Thomas Jefferson University
- Sidney Kimmel Medical College, Committee on Diversity and Inclusion

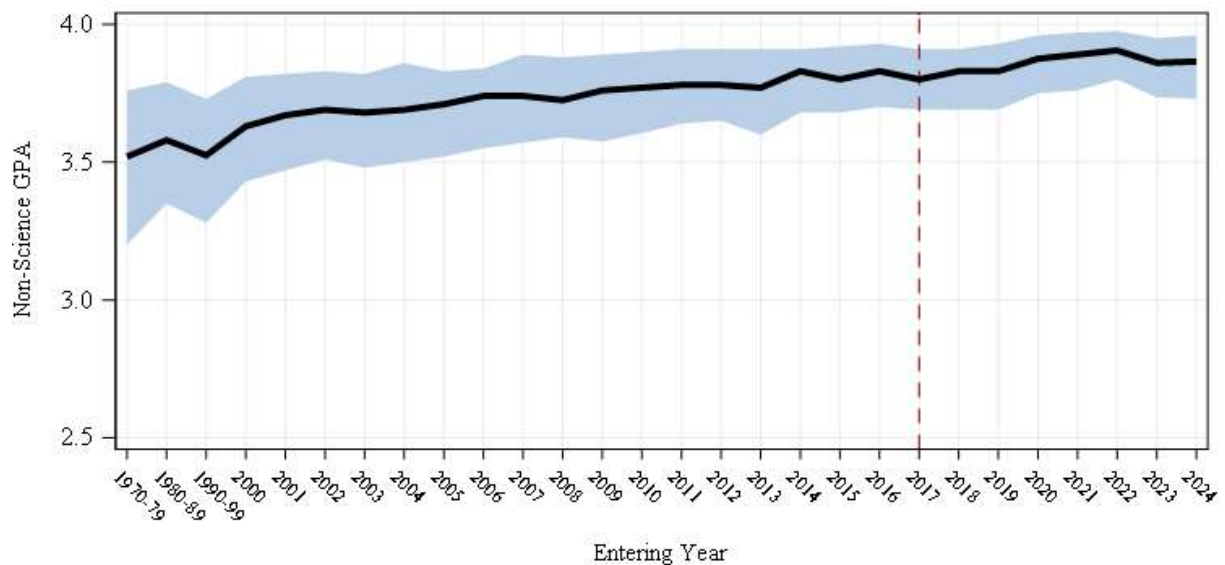
Exhibits

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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)

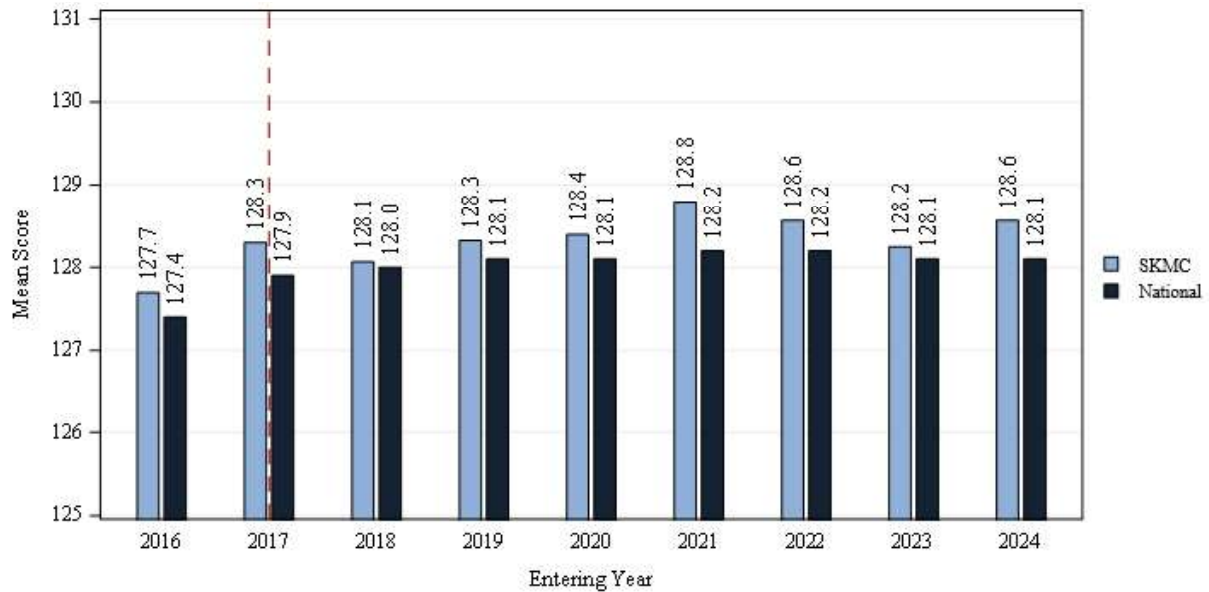
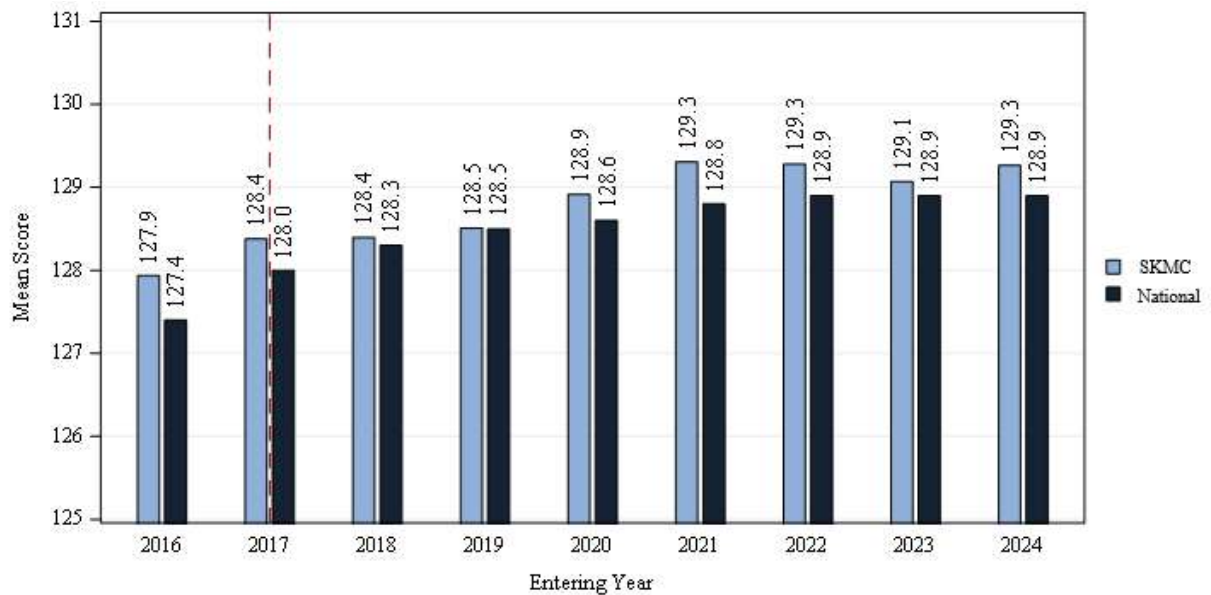


Exhibit 4
Average MCAT Scores of Matriculants (Psychological, Social, and Biological Foundations of Behavior)



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)

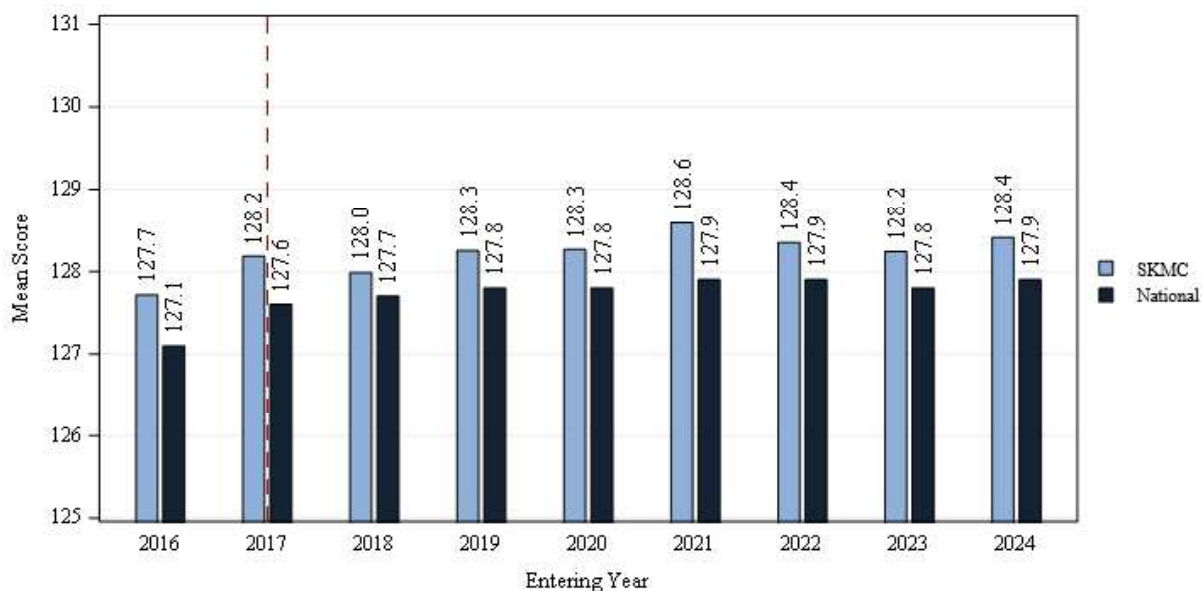
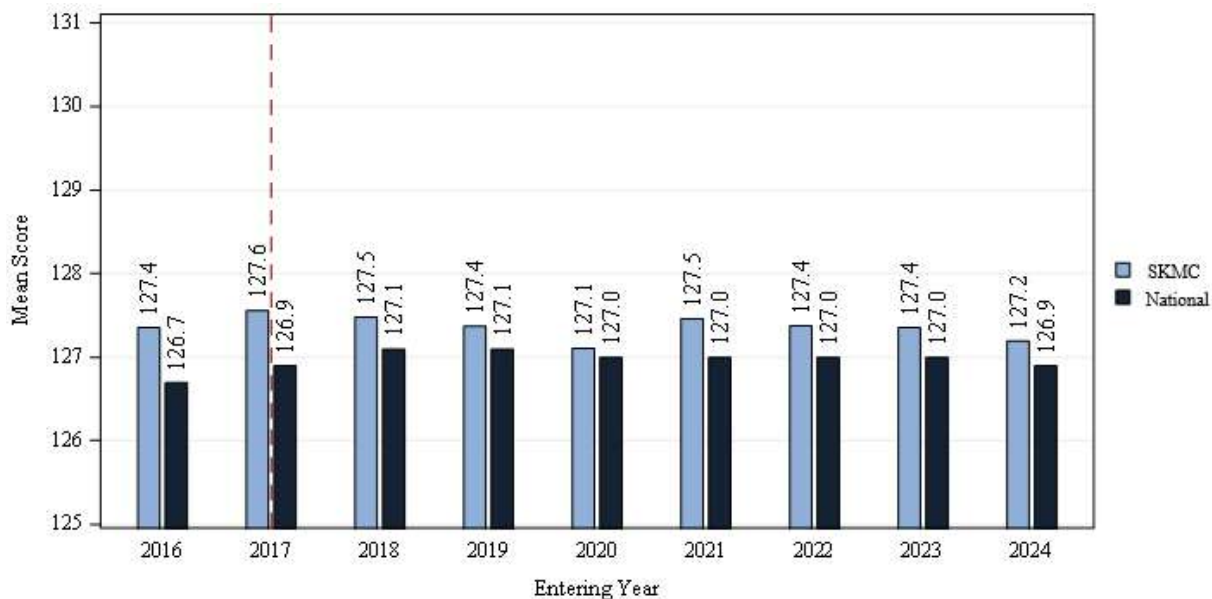
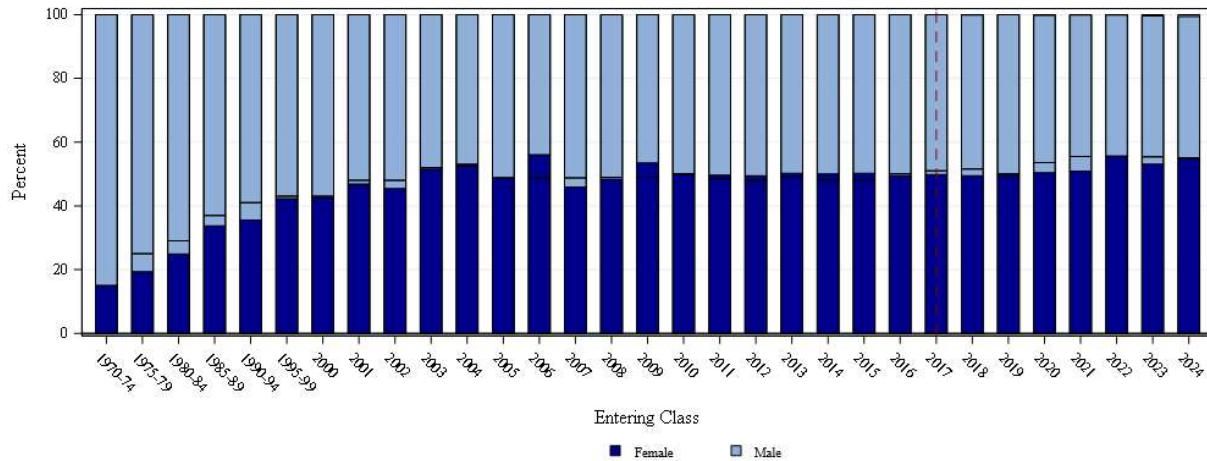


Exhibit 6 Average MCAT Scores of Matriculants (Critical Analysis and Reasoning Skills)



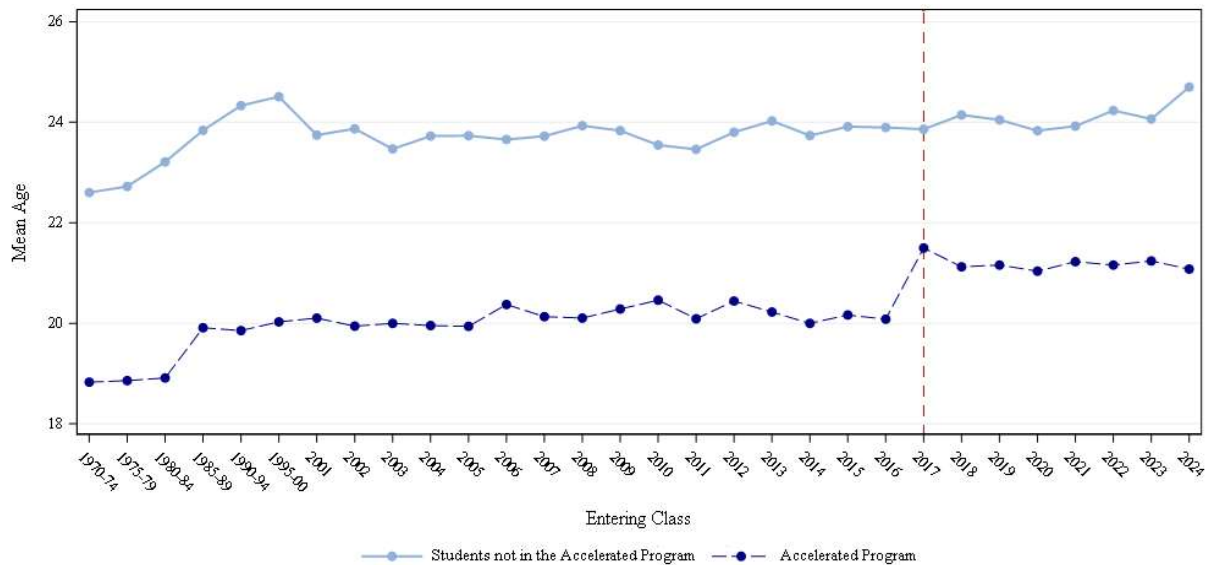
The new JeffMD curriculum was implemented in 2017, shown by vertical dash-line.

Exhibit 7 Percent of Matriculants by Gender



— Percent of women matriculants at all US medical schools.

Exhibit 8 Mean Age at Matriculation

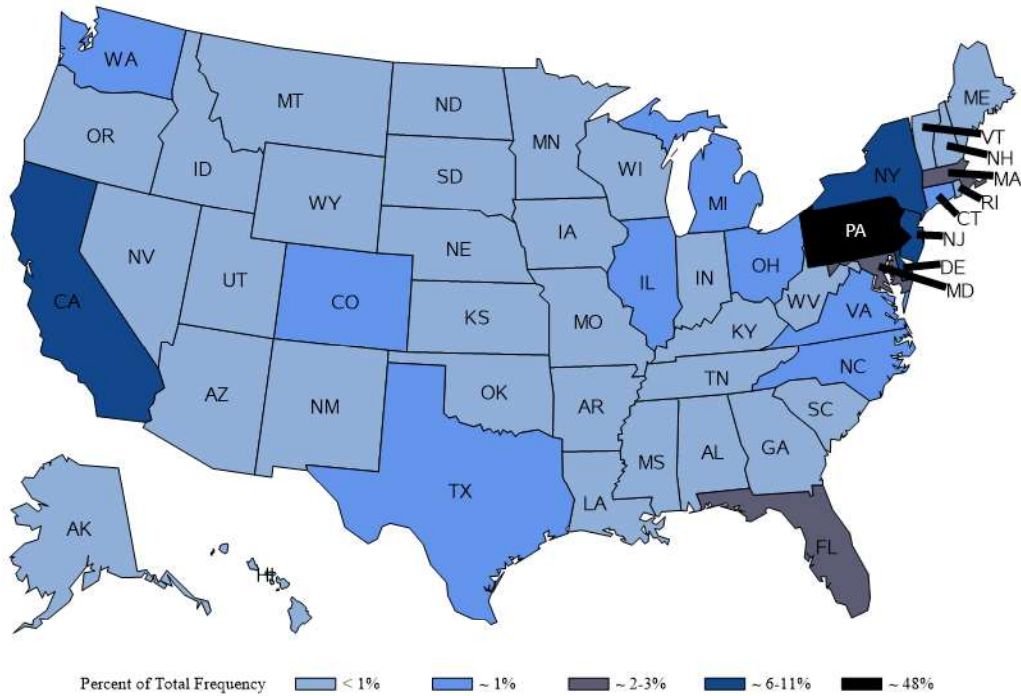


The accelerated program had been a 5-year combined BS-MD program before 1984. During the transition year 1984, no students were admitted to the program. It became a 6-year program between 1985-2015. Thereafter, it became a 7-year program. Increase in age of accelerated students in 1985 and 2017 is due 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 1970-2025



Entering Classes of 2015-2025

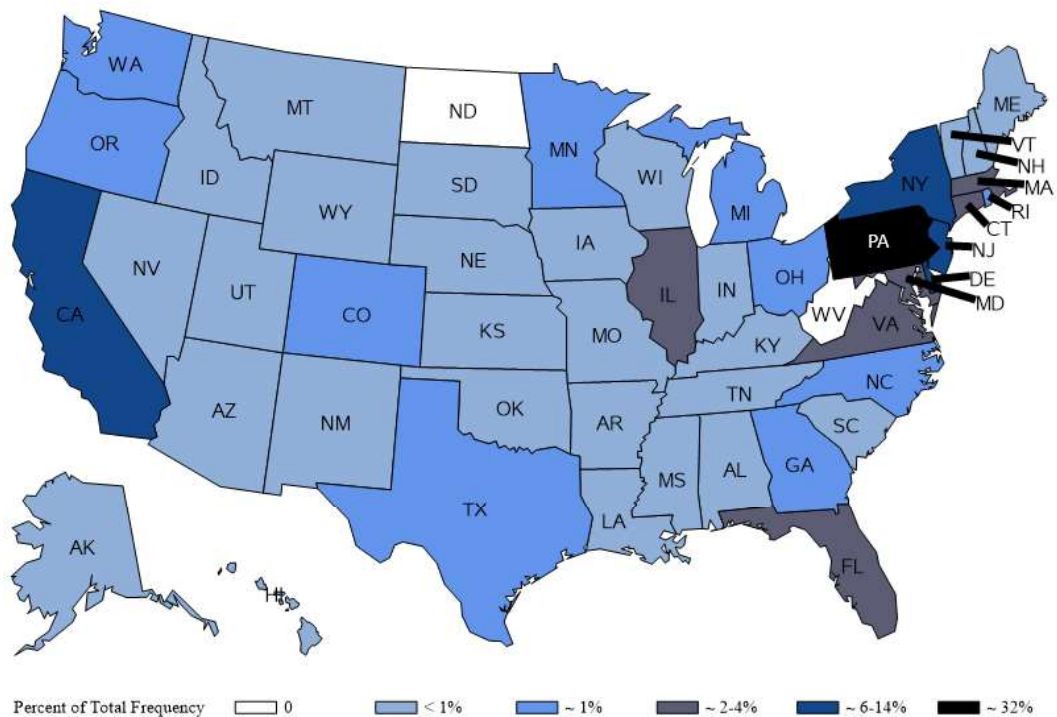
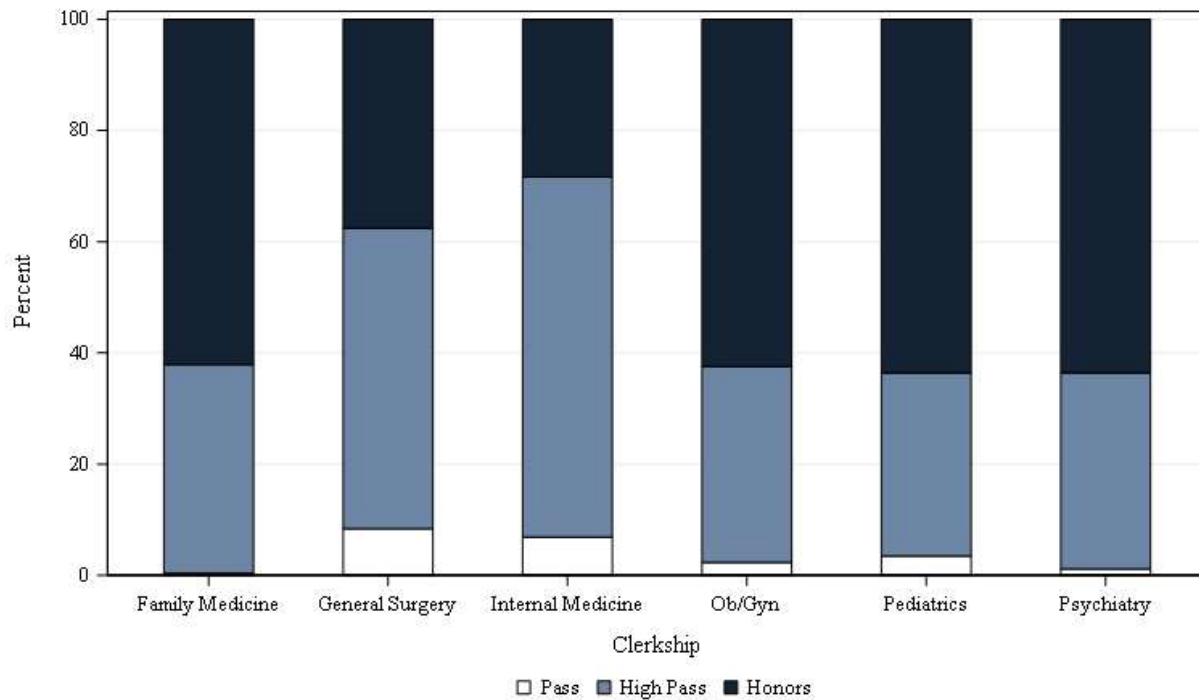


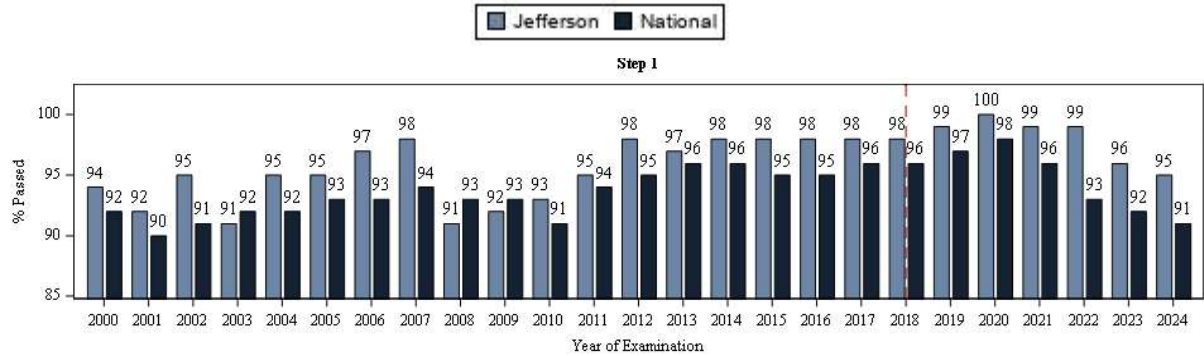
Exhibit 10
Clinical Rating of Students for Six Core Clerkships*
Graduating Class of 2025



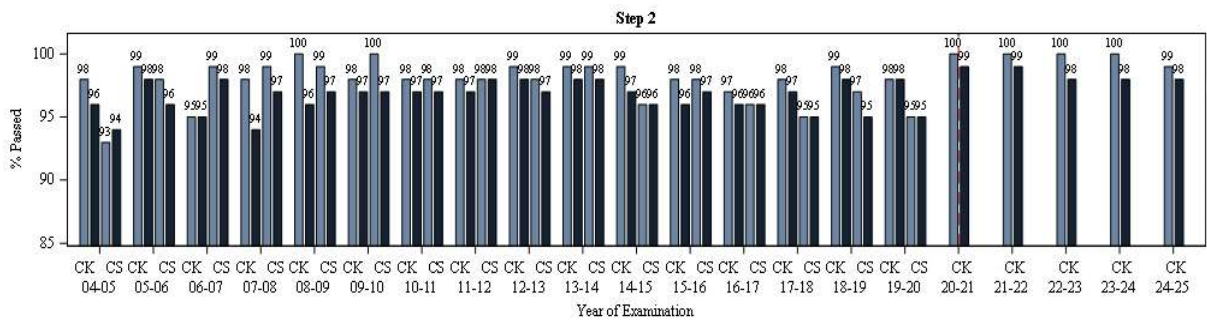
*Faculty's global rating of students' clinical competence. The clerkships completed by students that were in the Longitudinal Integration Curriculum (LIC) track occurred for a full academic year. For non-LIC students, however, the clerkships of Family Medicine, General Surgery, Ob/GYN, Pediatrics, and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

Exhibit 11

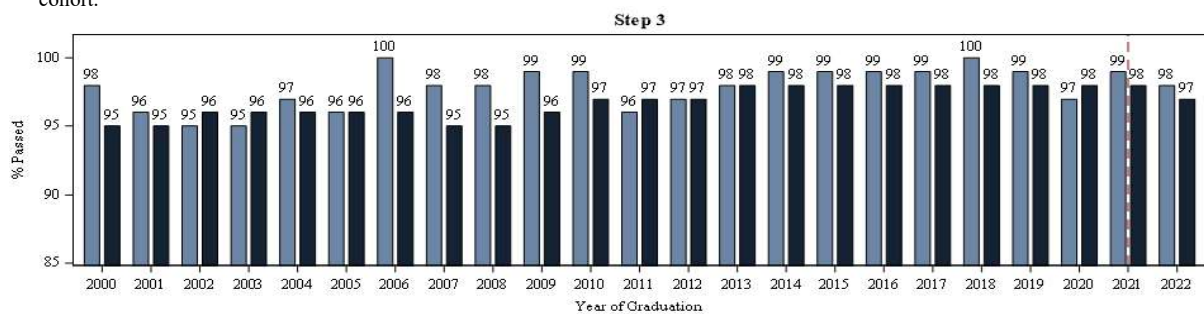
Pass Rates on the United States Medical Licensing Examination (USMLE)



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. The vertical dash-line indicates the first JeffMD cohort. The JeffMD curriculum started in 2017.



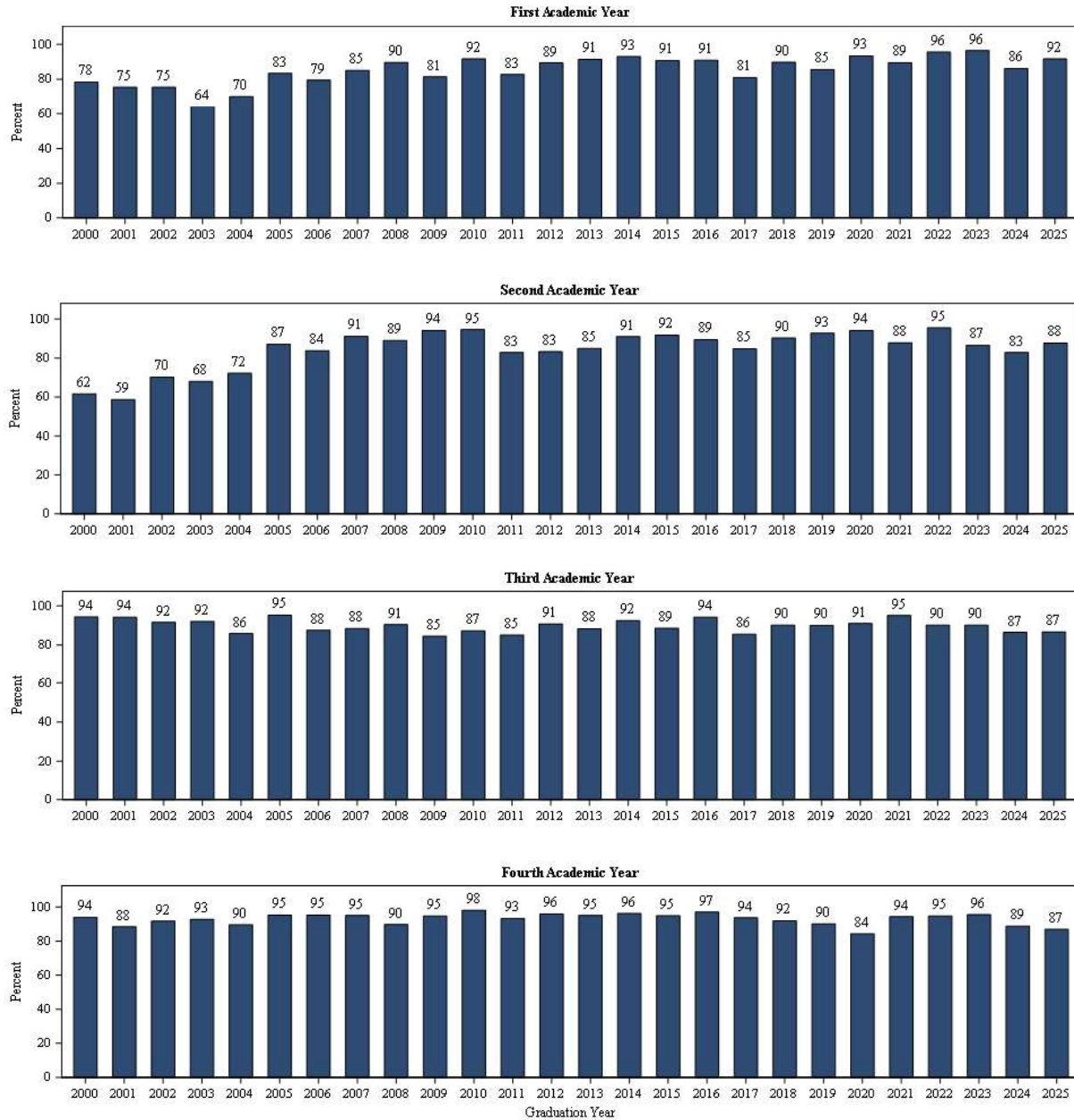
Data is presented for the candidate reference group who took the examination for the first time each year and who were one year from expected graduation. Starting from July 2004, Step 2 reports 2 scores, one for Clinical Knowledge (CK) and another for Clinical Skills (CS). Starting from July 2020, Step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



Data is presented for graduates who took the examination for the first time in each year. The vertical dash-line indicates the first JeffMD cohort. The JeffMD curriculum started in 2017.

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 43% 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 2000-2025

| Graduating Class | Scale Points | | | | | | | | | | Mean Score |
|------------------|------------------|----|----|----|-----|-----|-----|-----|-----|-----------------|------------|
| | 1 Very Poorly | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Very Well | |
| 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% | 8.51 |
| 2023 | 1% | 0% | 0% | 0% | 0% | 1% | 15% | 33% | 30% | 19% | 8.37 |
| 2024 | 0% | 0% | 1% | 1% | 1% | 2% | 15% | 26% | 31% | 22% | 8.42 |
| 2025 | 0% | 0% | 0% | 1% | 4% | 5% | 17% | 29% | 20% | 24% | 8.20 |

From the graduation questionnaires of the Jefferson Longitudinal Study. Response rates ranged from 43% to 93%. Response rates for 2020, 2021, and 2022 were below 50%.

Exhibit 14
Graduation, Transfers, and Attrition
Entering Classes of 2000-2021

| 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% | 1.3% | 2.2% |
| 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% | 0.4% | 2.4% |
| 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% | 6.3% | 0.0% | 2.0% |
| 2010 | 260 | 83.1% | 2.3% | 11.2% | 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% | 8.5% | 0.0% | 0.0% |
| 2014 | 260 | 82.3% | 1.9% | 13.5% | 0.0% | 2.3% |
| 2015 | 267 | 81.3% | 1.5% | 14.6% | 0.0% | 2.6% |
| 2016 | 267 | 81.6% | 1.1% | 16.1% | 0.0% | 1.1% |
| 2017 | 273 | 81.3% | 2.9% | 13.6% | 0.0% | 2.2% |
| 2018 | 269 | 79.6% | 1.1% | 17.5% | 0.0% | 1.9% |
| 2019 | 272 | 83.8% | 1.1% | 14.0% | 0.0% | 1.1% |
| 2020 | 266 | 80.8% | 0.4% | 17.3% | 0.0% | 1.5% |
| 2021 | 281 | 75.8% | 3.6% | 17.4% | 0.0% | 3.2% |

* 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

Classes of 1970-2025

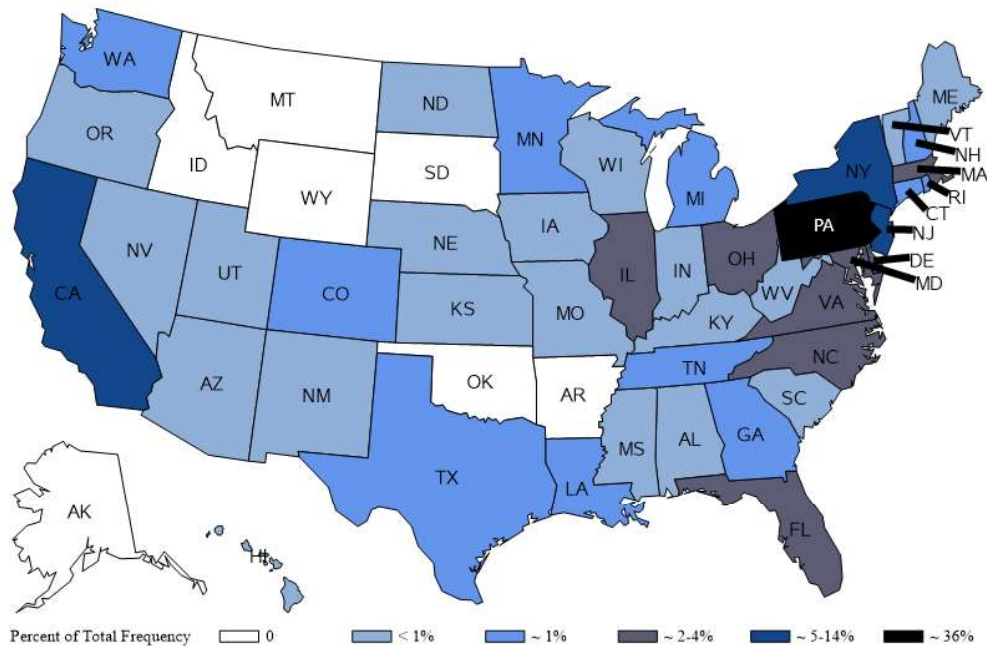
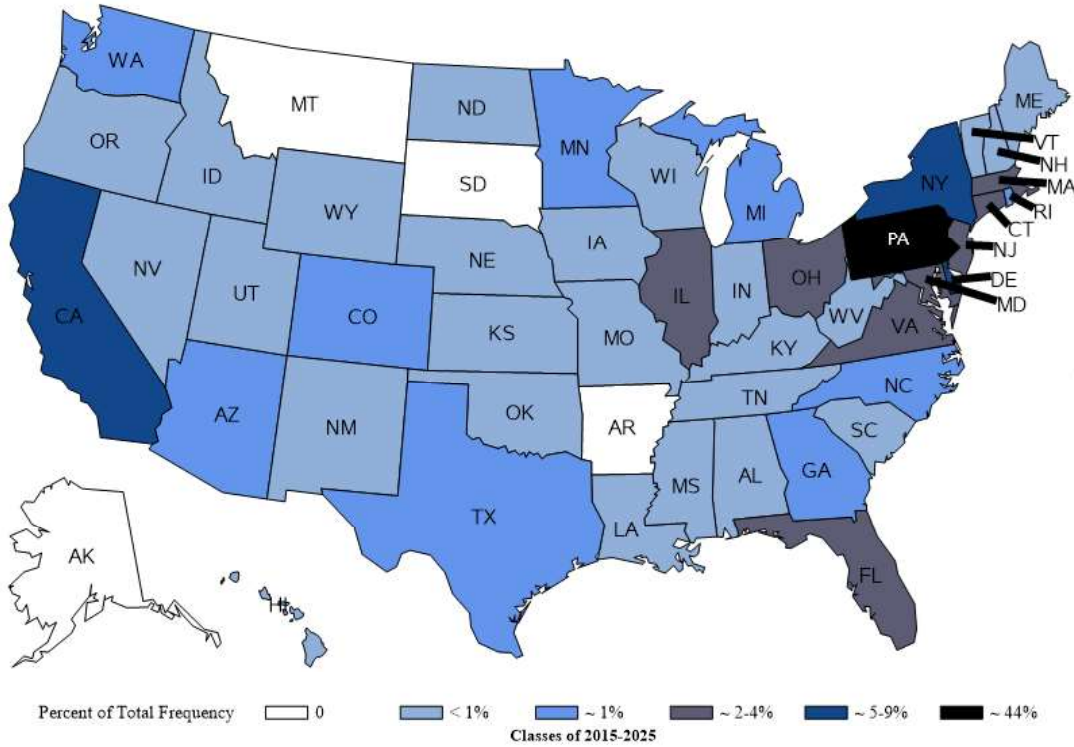
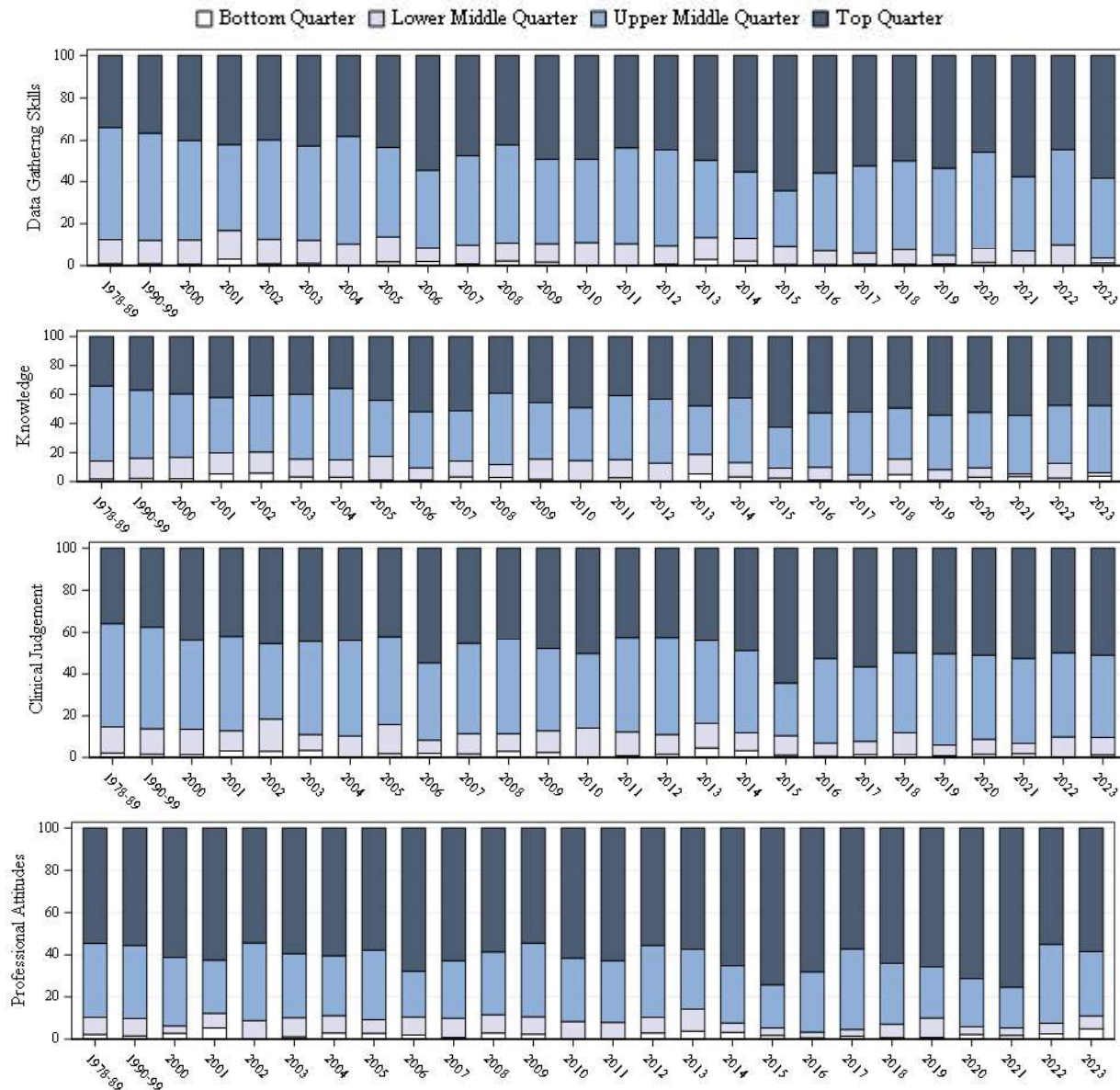
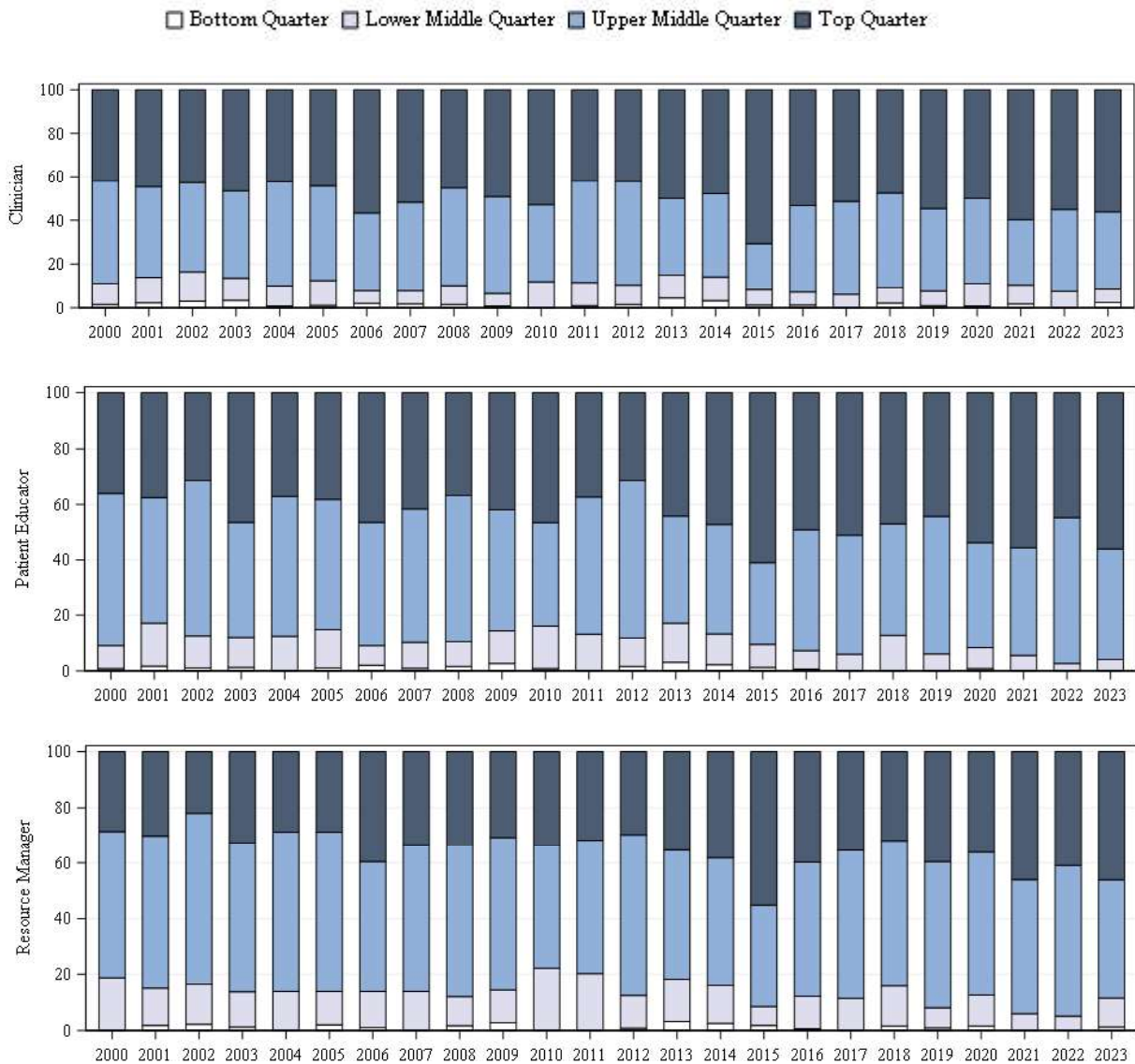


Exhibit 16 **Program Directors' Ratings in the First Postgraduate Year*** **Graduating Classes of 1978-2023**



*Response rates vary among classes, ranging from 16% to 83%. Each response rate is calculated based on the total number of graduates in the class.

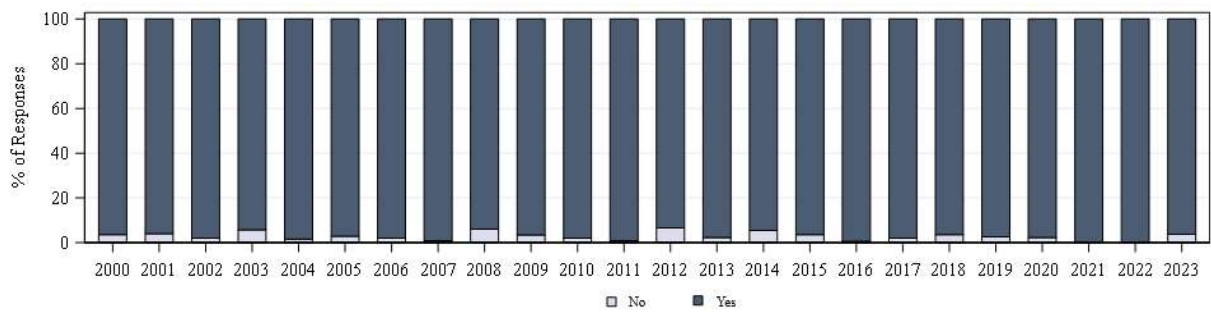
Exhibit 17
Program Directors' Ratings on Graduates' Ability to Perform the Three Roles of
Clinician, Patient Educator, and Resource Manager in the First Postgraduate Year. *
Graduating Classes of 2000-2023



*Response rates vary among classes, ranging from 15% 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 41 of this report.

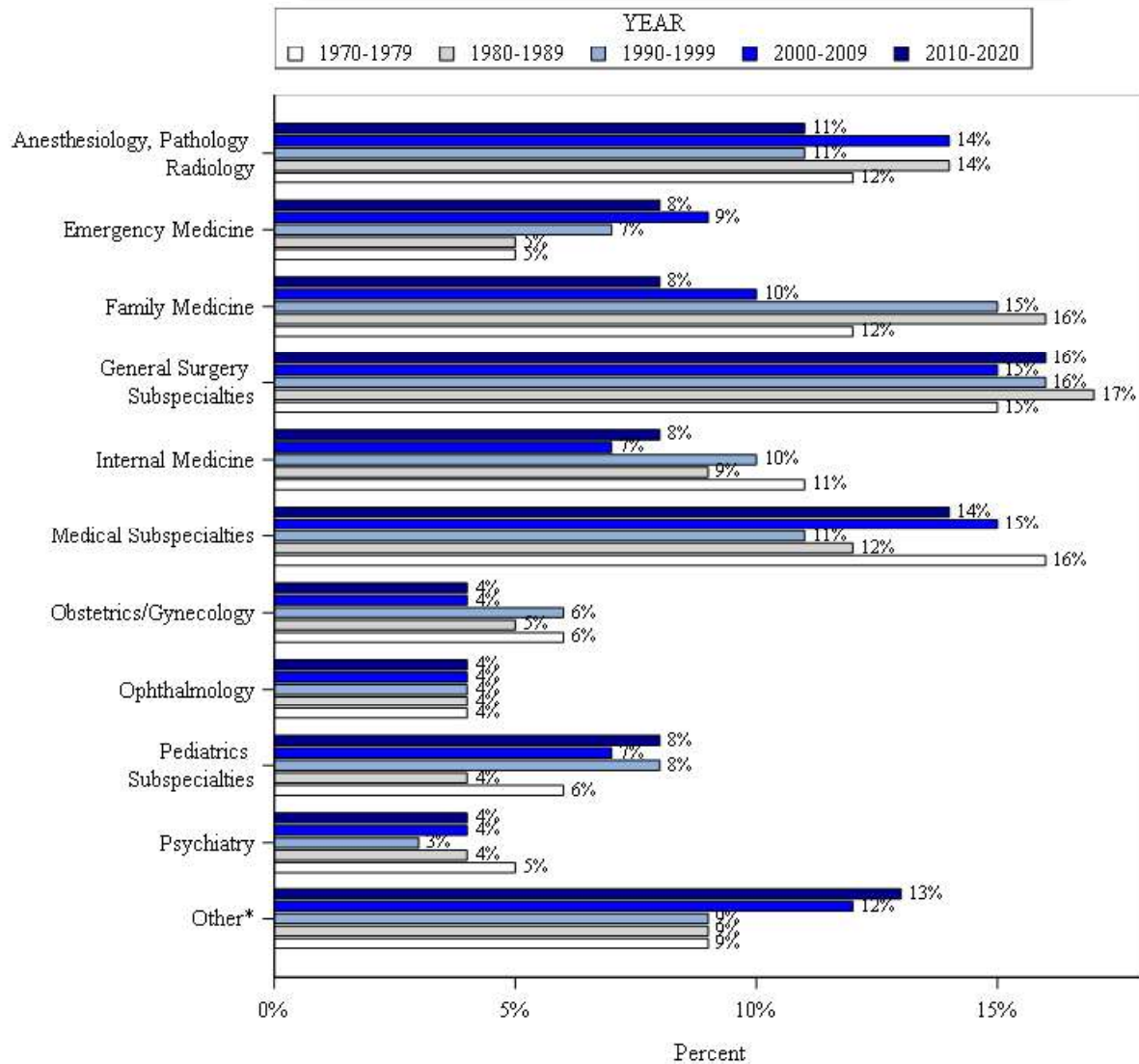
Exhibit 18
Program Directors' response to "Does This Resident Have the Qualities You Would Like to
See in Your Own Physician*
Graduating Classes of 2000-2023



*Response rates vary among classes, ranging from 15% to 72%. Each response rate is calculated based on the total number of graduates in the class.

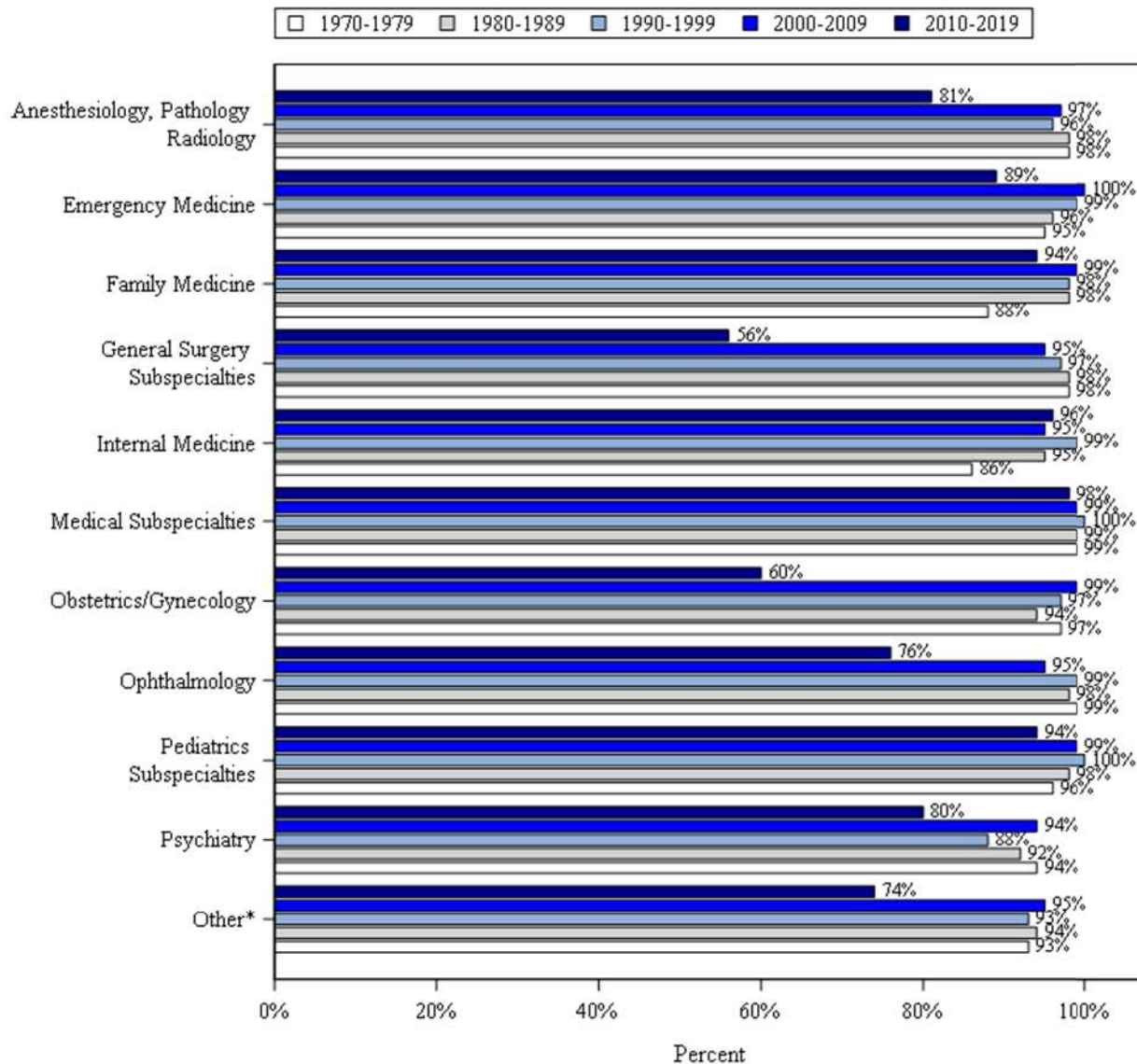
Program directors rated the graduates on Yes, No scale comparing them with all graduates they ever supervised. See Section VIII of the postgraduate rating form in this report.

Exhibit 19
Specialties of Alumni*
Graduating Classes of 1970-2020



***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.

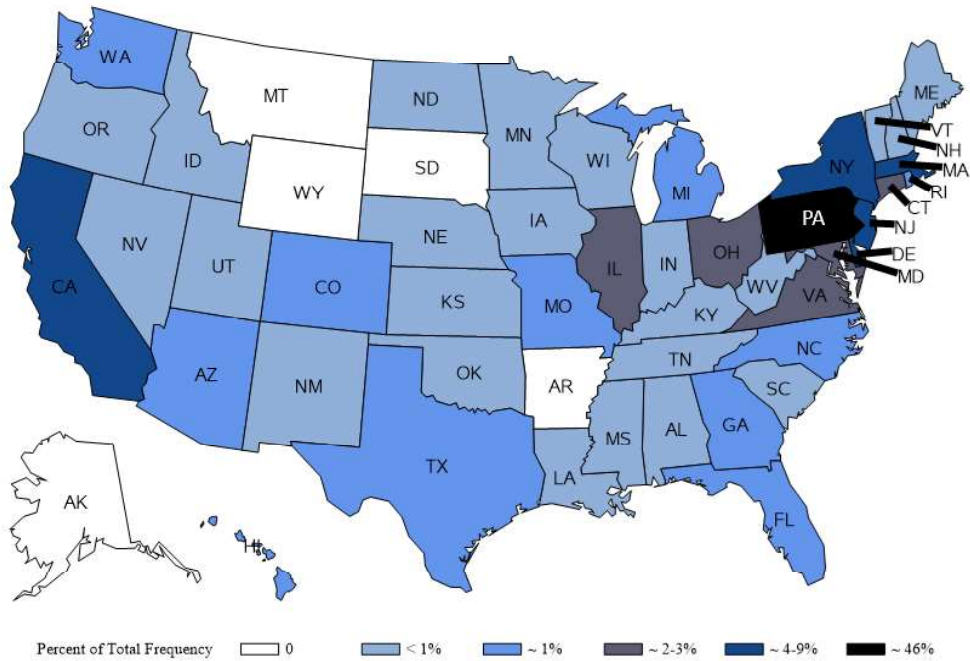
*"Other" includes 47 specialties and subspecialties, each representing 5% or less of the total alumni.

Source: American Medical Association.

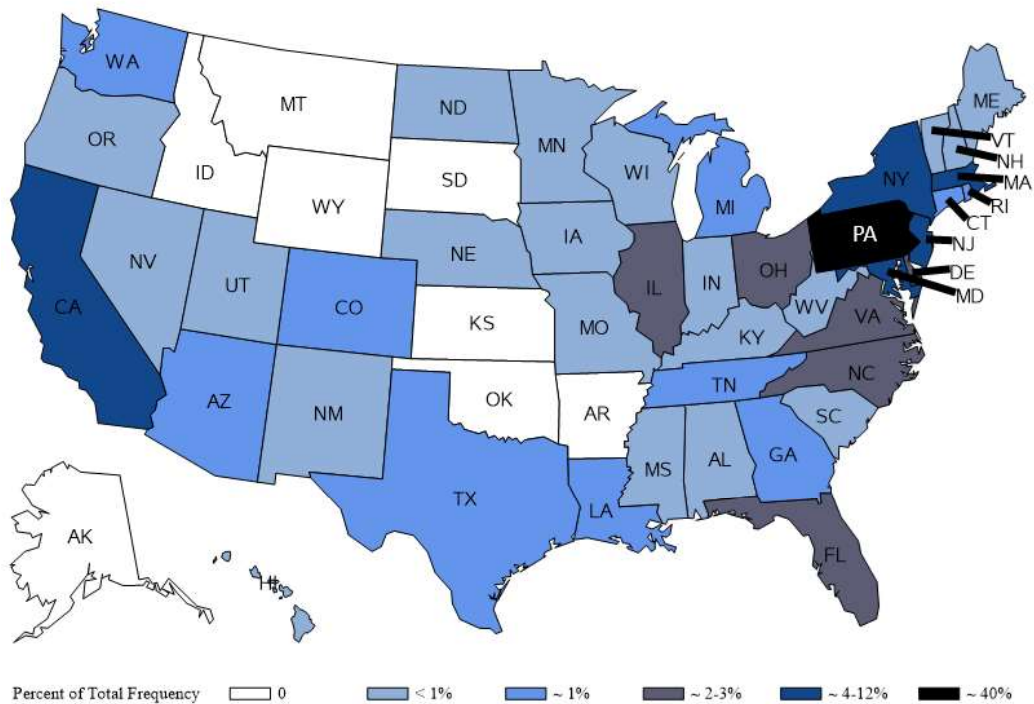
Exhibit 21

Current Location of Living Alumni

Classes of 1970-2019



Graduating Classes of 2009-2019



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 | 10 |
| 2 | 9 |
| 3 | 8 |
| 4 | 7 |
| 5 | 6 |
| 6 | 5 |
| 7 | 4 |
| 8 | 3 |
| 9 | 2 |
| 10 | 1 |

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
SIDNEY KIMMEL MEDICAL COLLEGE at
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