

10/10 - 5/20	University of North Carolina at Chapel Hill <i>Department of Surgery, School of Medicine</i> Research Assistant Professor	Chapel Hill, NC
9/99-8/17	University of North Carolina at Chapel Hill <i>Cecil G. Sheps Center for Health Services Research</i> Director, North Carolina Health Professions Data System	Chapel Hill, NC
7/16-8/16	Health Workforce New Zealand New Zealand Ministry of Health Visiting Scholar	Wellington, NZ
1/06 – 4/15	University of North Carolina at Chapel Hill <i>Cecil G. Sheps Center for Health Services Research</i> Research Fellow	Chapel Hill, NC
3/08 -12/12	University of North Carolina at Chapel Hill <i>Cecil G. Sheps Center for Health Services Research</i> Associate Director American College of Surgeons Health Policy Research Institute	Chapel Hill, NC
9/09-7/10	National Health Service, England <i>Workforce Review Team</i> Academic Researcher	Winchester, UK
9/99-4/09	University of North Carolina at Chapel Hill <i>Cecil G. Sheps Center for Health Services Research</i> Research Associate	Chapel Hill, NC
10/97-10/98	University of North Carolina, Chapel Hill <i>Department of Health Policy and Management</i> Project Director	Chapel Hill, NC
4/94-9/97	College of Nurses of Ontario Project Manager, Statistics and Research	Toronto, ON
9/92-5/93	University of California <i>Department of City and Regional Planning</i> Research Assistant	Berkeley, CA
7/88-2/91	Klein & Co., Inc. Research Associate	Cambridge, MA

HONORS/AWARDS

2019	North Carolina Institute of Medicine Award for Excellence in Health Policy Leadership
2016	University Research Council Award, Office of Research Development, University of North Carolina, Chapel Hill, NC.
2015	Junior Faculty Development Award, Office of the Executive Vice Chancellor and Provost,

- University of North Carolina, Chapel Hill, NC.
- 2009 Delta Omega, Honorary Public Health Society, Gillings School of Global Public Health, University of North Carolina, Chapel Hill, NC.
- 2009 Mary Thompson Award for Outstanding Achievement, Department of Health Policy and Management, University of North Carolina, Chapel Hill, NC.
- 2007 Impact Award, UNC Graduate Education Advancement Board, University of North Carolina, Chapel Hill, NC. Award given to graduate students for exceptional research with direct benefits to North Carolina.
- 1989 Rhodes Scholarship Semi-Finalist
- 1988 Phi Beta Kappa
- 1986, 1988 National Collegiate Athletic Association All-American Swimmer

BIBLIOGRAPHY AND PRODUCTS OF SCHOLARSHIP

Book Chapters (*denotes student)

Fraher E, Fried B. “The Chronic Care Workforce” in Chronic Care Illness Care: Principles and Practice. Timothy P. Daaleman and Margaret R. Helton, eds. Springer International Publishing AG. 2018; 527-536.

Fraher E, Morrison M*. “Health Workforce Planning in a Rapidly Changing Health Care System” in Human Resources for Health: Managing for Success. Bruce Fried and Myron D. Fottler, eds. Health Administration Press, 4th edition. 2014; 427-454.

Refereed Articles (52 articles) (*denotes student/trainee)

Original Research

Fraher EP, Cummings A*, Neutze D. The Evolving Role of Medical Assistants in Primary Care Practice: Divergent and Concordant Perspectives from MAs and Family Physicians. *Medical Care Research and Review*. 2020: epub ahead of print, PMID: 33074038

Fraher EP, Brandt BF. Toward a System Where Workforce Planning, Education and Practice Are Designed around Patients and Populations Not Professions. *Journal of Interprofessional Care*. 2019 Jan 23:1-9. doi: 10.1080/13561820.2018.1564252. [Epub ahead of print] PMID:30669922

Li Y*, Holmes GM, **Fraher EP**, Mark BA, Jones CB. Primary Care Nurse Practitioner Wages: Differences by Employment Setting. *Nursing Outlook*, 2018; Jul 17. pii: S0029-6554(18)30039-3. doi: 10.1016/j.outlook.2018.06.009.

Fraser MW, Lombardi BM*, Wu S*, Zerden LD, Richman EL, **Fraher EP**. Social work in integrated primary care: A systematic review. *Journal of Social Work and Research*. 2018; 9(2):0-36.

Fraher EP, Richman E, de Saxe Zerden L, Lombardi B*. Social Workers Student and Practitioner Roles in Integrated Care Settings. *American Journal of Preventive Medicine*. 2018; Jun;54(6S3):S281-S289. doi: 10.1016/j.amepre.2018.01.046.

Domino M, Lin C*, Morrissey J, Ellis A, **Fraher EP**, Richman E, Thomas K, Prinstein M. Training Psychologists for Rural Practice: Exploring Opportunities and Constraints. *Journal of Rural Health*. 2018 April 17. <http://dx.doi.org/10.1111/jrh.12299>

Freburger JK, Li D, **Fraher EP**. Community Use of Physical and Occupational Therapy after Stroke and Risk of Hospital Readmission. *Archives of Physical Medicine & Rehabilitation* 2017 August 11. pii: S0003-9993(17)30536-1. doi: [10.1016/j.apmr.2017.07.011](https://doi.org/10.1016/j.apmr.2017.07.011).

Freburger J, Li D, Johnson A, **Fraher E**. Physical and Occupational Therapy in Acute and Community Settings After Stroke: Are Patients Getting the Care They Need? *Archives of Physical Medicine & Rehabilitation* 2017 Apr 4. pii: S0003-9993(17)30220-4. doi: [10.1016/j.apmr.2017.03.007](https://doi.org/10.1016/j.apmr.2017.03.007).

Fraher E. The Value of Workforce Data in Shaping Nursing Workforce Policy: A Case Study from North Carolina. *Nursing Outlook*. 2017; 65(2): 154-161. <http://dx.doi.org/10.1016/j.outlook.2016.10.003>

Holmes GM, **Fraher E**. Developing Physician Migration Estimates for Workforce Models. *Health Services Research*. 2017 Feb; 52 Suppl 1: 529-545.

Fraher E, Knapton A, Holmes GM. A Methodology for Using Workforce Data to Decide Which Specialties and States to Target for GME Expansion. *Health Services Research*. 2017 Feb; 52 Suppl 1: 508-528.

Ricketts TC, Adamson WT, **Fraher EP**, Knapton A, Hirschl R, Abdullah F, Klein MD. (2016). Future Supply of Pediatric Surgeons: Analytical Study of the Current and Projected Supply of Pediatric Surgeons in the Context of a Rapidly Changing Process for Specialty and Subspecialty Training. *Annals of Surgery*. 2016 Mar;265(3):609-615.

Ricketts TC, **Fraher EP**, Spero JC. Counting Physicians in Specialties: By What They Do or How They Train? *Journal of Medical Regulation*. 2016 April; 102(2): 13-20.

Fraher E, Morgan P, Johnson A. Specialty Distribution of Physician Assistants and Nurse Practitioners in North Carolina. *Journal of the American Academy of Physician Assistants*. 2016; 29(4): 38-43.

Spetz J, **Fraher E**, Li Y*, Bates T. How Many Nurse Practitioners in Primary Care? It Depends on How You Count Them. *Medical Care Research and Review*. 2015 June; 72(3): 359-375.

Spero J, **Fraher EP**. Running the Numbers: The Maldistribution of Health Care Providers in Rural and Underserved Areas in North Carolina. *North Carolina Medical Journal*. 2014; 75(1): 74-79.

Holmes GM, Morrison M*, Pathman DE, **Fraher E**. The Contribution of "Plasticity" to Modeling How a Community's Need for Health Care Services Can Be Met by Different Configurations of Physicians. *Academic Medicine*. 2013; 88(12): 1877-1882.

Pruthi RS, Neuwahl S*, Nielsen M, **Fraher E**. Recent Trends in the Urology Workforce in the United States. *Urology*. 2013; 82(5): 987-993.

Charles AG, Ortiz-Pujols S, Ricketts T, **Fraher E**, Neuwahl S*, Cairns B, et al. The Employed Surgeon: a Changing Professional Paradigm. *JAMA Surgery*. 2013; 148(4): 323-328.

Fraher EP, Knapton A, Sheldon GF, Meyer A, Ricketts TC. Projecting Surgeon Supply Using a Dynamic Model. *Annals of Surgery*. 2013; 257(5): 867-872.

McGee V, **Fraher E**. The State of Racial/Ethnic Diversity in North Carolina's Health Workforce. *North Carolina Medical Journal*. 2012; 73(5): 337-354.

Fraher E, McGee V, Hom J*, Lyons J, Gaul K. We're Not Keeping Up with the Joneses: North Carolina Has Fewer Dentists per Capita Than Neighboring (and Most Other) States. *North Carolina Medical Journal*. 2012; 73(2): 111-114.

Neuwahl S*, **Fraher E**, Pillsbury H 3rd, Weissler MC, Ricketts TC, Gaul K. Trends in the Otolaryngology Workforce. *Bulletin of the American College of Surgeons*. 2011; 97(3): 30-34.

Ortiz-Pujols S, Thompson K, Sheldon G, **Fraher E**, Ricketts TC. Burn Care: Are There Enough Providers and Facilities? *Bulletin of the American College of Surgeons*. 2011; 96(11): 33-37.

Neuwahl S*, Thompson K, **Fraher E**, Ricketts TC. Urology Workforce Trends. *Bulletin of the American College of Surgeons*. 2011; 97(1): 46-49.

Fraher E, Belsky DW*, Gaul K, Carpenter J. Factors Affecting attrition from associate degree programs in North Carolina. *Cahiers de Sociologie et de Démographie Médicales*. 2010 Apr-Jun; 50(2): 213-246.

Fraher EP, Carpenter J, Broome S. Health Care Employment and the Current Economic Recession. *North Carolina Medical Journal*. 2009; 70(4): 331-336.

Poley S, Belsky D*, Gaul K, Ricketts T, **Fraher E**, Sheldon G. Longitudinal Trends in the U.S. Surgical Workforce. *Bulletin of the American College of Surgeons*. 2009; 94(8): 27-31.

King J*, **Fraher EP**, Ricketts TC, Charles A, Sheldon GF, Meyer A. Characteristics of Practice among Rural and Urban General Surgeons in North Carolina. *Annals of Surgery*. 2009; 249(6): 1052-1060.

Landry MD, Ricketts TC, **Fraher E**, Verrier MC. Physical Therapy Health Human Resource Ratios: A Comparative Analysis of the United States and Canada. *Physical Therapy*. 2009 Feb; 89(2): 149-161.

Gaul K, King J*, **Fraher EP**. Supply of Primary Care Practitioners by Profession. *North Carolina Medical Journal*. 2007; 68(3): 211-213.

Fraher EP. Location, Location, Location: North Carolina Faces a Shortage of Primary Care and Specialty Practitioners in Rural and Underserved Counties. *North Carolina Medical Journal*. 2007; 68(3): 194-198.

Fraher EP. The Supply of Primary Care Physicians Assistants and Nurse Practitioners in Underserved North Carolina. *Journal of Physician Assistant Education*. 2006; 17(1): 39-42.

Weiner BJ, Ricketts TC, **Fraher EP**, Hanny D, Coccodrilli, LD. Area Health Education Centers: Strengths, Challenges and Implications for Academic Health Science Center Leaders. *Health Care Management Review*. July-August 2005; 30(3): 194-202.

Fraher EP, Slifkin RT, Smith L, Randolph R, Rudolf M, Holmes GM. How Might the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 Affect the Financial Viability of Rural Pharmacies? An Analysis of Preimplementation Prescription Volume and Payment Sources in Rural and Urban Areas. *Journal of Rural Health*. 2005 Spring; 21(2): 114-121.

Dyson SL, Greene SB, **Fraher EP**. A Shortage of Health Information Management Professionals: How Would We Know? *Journal of Allied Health*. 2004 Fall; 33(3): 167-173.

Biddle AK, **Fraher E**. Developing Clinical Practice Guidelines for Spinal Cord Medicine: Lessons Learned. *Physical Medicine and Rehabilitation Clinics of North America*. February 2000; 11(1): 227-241.

Perspectives and Commentaries

Armstrong D, Moore J, **Fraher EP**, Frogner, BK, Pittman P, Spetz J. Covid-19 and the Health Workforce. *Medical Care Research and Review*. October 2020, epub ahead of print.
<https://journals.sagepub.com/doi/pdf/10.1177/1077558720969318>

Hawes EM, Weidner A, Page C, Longenecker R, Pauwels J, Crane S, Chen F, **Fraher EP**. A Roadmap to Rural Residency Program Development. *Journal of Graduate Medical Education* August 2020, 12(4):384-387.
<http://dx.doi.org/10.4300/JGME-D-19-00932.1>

Fraher EP. Primary Care Teams: Past, Present and Future. *The Journal of the American Board of Family Medicine* July 2020, 33 (4) 495-498; DOI: <https://doi-org.libproxy.lib.unc.edu/10.3122/jabfm.2020.04.200260>

Fraher EP, Wright B, Gwyther Holder M, Akiyama J, Toomey T. Will Community Health Centers Survive Covid-19? *The Journal of Rural Health*. 2020 May. Accepted Author Manuscript. doi:[10.1111/jrh.12473](https://doi.org/10.1111/jrh.12473)

Fraher EP, Balu R, Buerhaus P, George J, Murillo C, Washington AE. Developing a Workforce for Health in North Carolina: Planning for the Future. *North Carolina Medical Journal*. 2020 May-Jun;81(3):185-190. doi: 10.18043/ncm.81.3.185

Fraher EP, Pittman P, Frogner BK, Spetz J, Moore J, Beck AJ, Armstrong D, Buerhaus PI. Ensuring and Sustaining a Pandemic Workforce. *N Engl J Med*. 2020 April 8 2020. Epub DOI: 10.1056/NEJMp2006376

Frogner BK, **Fraher EP**, Spetz J, Pittman P, Moore J, Beck AJ, Armstrong D, Buerhaus PI. It's Time to Modernize Health Professions Scope of Practice Regulations. *N Engl J Med*. 2020 Feb 13;382(7):591-593.

Fraher E, Ricketts TC. Building a Value-Based Workforce in North Carolina. *North Carolina Medical Journal*. 2016; 77(2): 94-8.

Stitzenberg KB, Chang Y, Louie R, Groves JS, Durham D, **Fraher EP**. Improving our understanding of the surgical oncology workforce. *Annals of Surgery*. 2014;259 (3) :556-562.

Ricketts TC, **Fraher EP**. Reconfiguring Health Workforce Policy so that Education, Training, and Actual Delivery of Care are Closely Connected. *Health Affairs*. 2013; 32(11): 1874-1880.

Fraher E, Ricketts TC, Lefebvre A, Newton WP. The Role of Academic Health Centers and Their Partners in Reconfiguring and Retooling the Workforce Required in a Transformed System. *Academic Medicine*. 2013; 88(12): 1812-1816.

Fraher E, Stitzenberg K. Building Better Oncology Data Systems and Workforce Models in a Rapidly Changing Health Care System. *Journal of Oncology Practice*. 2013; 9(1):1-2. PMID: 3545657.

Fraher E, Jones CB. North Carolina's Nursing Workforce: Planning Today for a Reformed Tomorrow. *North Carolina Medical Journal*. 2011; 72(4): 320-323.

Fraher E, Poley ST, Sheldon GF, Ricketts TC, Thompson KW. Shaping Surgical Workforce Policy through Evidence-Based Analyses. *Bulletin of the American College of Surgeons*. 2011; 96(5): 37-45.

Fraher E, Poley ST, Sheldon GF, Ricketts TC, Thompson KW. Shaping Surgical Workforce Policy through Evidence-Based Analyses. *Bulletin of the Royal College of Surgeons of England*. 2011; 93(5): 1-5.

Fraher E, Harden B, Kimball M*. An International Call to Arms to Improve Allied Health Workforce Planning. *Journal of Allied Health*. 2011; 40(1): 43-49.

Harden B, **Fraher EP**. The Challenge of Health Workforce Planning in the Context of Service Redesign, Changing Demographics and International Workforce Migration. *International Journal of Therapy and Rehabilitation*. 2010; 17(4): 195-200.

Sheldon G, Ricketts TC, Charles A, King J*, **Fraher EP**, Meyer A. The Global Health Workforce Shortage: Role of Surgeons and Other Providers. *Advances in Surgery*. 2008; 42: 63-85.

Editorials and Letters

Bowser J, Reed H, **Fraher E**. Commentaries on Health Services Research. *Journal of the American Academy of Physician Assistants*. 2015; 28(7): 61-62.

Refereed Articles - In Press/Submitted (*denotes student/learner)

Fraher E, Knapton A. "Health Workforce Planning in a Rapidly Changing Health Care System" in Human Resources for Health: Managing for Success. Bruce Fried and Carla Simpson eds. Health Administration Press, 5th edition. 2021 (in press).

Wilson H, Galloway EM, Spero J, Long JC, Ricketts TC, **Fraher EP**. Using State Licensure Data to Assess NC's Health Workforce COVID-19 Response Capacity in the Early Months of the Pandemic, in press at the *North Carolina Medical Journal*. August 28, 2020.

Ricketts TC, Porterfield DS, Miller RL*, **Fraher EP**. The Supply and Distribution of the Preventive Medicine Physician Workforce, in press at the *Journal of Preventive Medicine and Public Health*, November 2, 2020.

De Saxe Zerden, Lombardi BM, Richman EL, **Fraher EP**, Shoenbill K. Harnessing the Electronic Health Record to Advance Integrated Care: Lessons from Social Work. Revise and resubmit at *Journal of Family and Systems Health*. July 14, 2020.

Refereed Conference Posters and Presentations (64 presentations) (*denotes student)

Kandrack R*, Holmes M., **Fraher EP**. Rural-urban differences in family medicine physician scope of services. Podium presentation, 2020 AcademyHealth Annual Research Meeting (virtual).

Patel E*, **Fraher EP**. The Shift in Nursing Employment from Acute to Ambulatory Settings: Implications for Education, Regulation and Practice. Poster presentation, 2020 AcademyHealth Annual Research Meeting (virtual).

Nikpour J*, **Fraher EP**. Maldistribution of the Population Health Nursing Workforce in North Carolina. Poster presentation, 2020 Interdisciplinary Research Group on Nursing Issues, AcademyHealth Annual Research Meeting (virtual).

Pauwels J, Longenecker R, **Fraher E**, Hawes E, Weidner A, Crane S, Page C. Rural Residency Program Development: Assets and Challenges in Engaging Rural Communities in Multiple Specialties. Poster at 2020 Accreditation Council for Graduate Medical Education (ACGME) Annual Educational Conference, San Diego, February 27, 2020.

Fraher E. Novel Data and Methods Discussant. AcademyHealth Annual Research Meeting, Washington DC, June 4, 2019.

Fraher E, Framing and Disseminating Nursing Workforce Research and Policy. Keynote presentation to IRGNI, AcademyHealth Annual Research Meeting, Seattle, WA, June 23, 2018.

Fraher E, Cummings A, Neutze D, Medical Assistant (MA) and Family Physician Perceptions of Mas' Evolving Roles in Primary Care Practices in North Carolina. AAMC Health Workforce Research Conference, Tysons Corner, VA,, May 11, 2018.

Fraher E, Knapton, A, Kandrack, R, Holmes, M. Physician Projection Models: Why the Differences and Why Does It Matter?, AAMC Health Workforce Research Conference, Tysons Corner, VA., May 10, 2018

Fraher E, Galloway E, Spero J. The Power of Data to Shape Rural Health Workforce Policy and Challenge Narratives. AAMC Health Workforce Research Pre-Conference, Tysons Corner, VA., May 9, 2018

Spero J, **Fraher E**. Health Workforce Trends and Challenges in North Carolina and the United States. North Carolina Statewide AHEC Conference. Chapel Hill, NC. December 7, 2017.

Li Y*, Holmes GM, **Fraher EP**, Mark BA, Jones CB. A Comparison of Nursing Care and Physician Care in the U.S. Primary Care Settings. Podium presentation. Health Workforce Interest Group Meeting, 2017 AcademyHealth Annual Research Meeting. New Orleans, LA. June 25, 2017.

Li Y*, Holmes GM, **Fraher EP**, Mark BA, Jones CB. A Comparison of Nursing Care and Physician Care in the U.S. Primary Care Settings. Podium presentation. 2017 National Forum of State Nursing Workforce Centers Annual Conference. Denver, CO. June 8, 2017.

Knapton A, **Fraher E**. Rapid growth in NP and PA supply will likely mitigate national physician shortage. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 5, 2017.

Spetz J, **Fraher E**, Richman E. Are Nurses Moving to Outpatient Jobs? Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 4, 2017.

Galloway E, Spero J, **Fraher E**. Developing Interactive Data Visualizations for State Workforce Planning and Policy. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 4, 2017.

Fraher E, Spero J, Bacon T. State-Based Approaches to Reforming Medicaid-Funded Graduate Medical Education. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 4, 2017.

Lombardi B*, Zerden L, **Fraher E**, Fraser M, Wu S*. Social Work in Integrated Primary Care: A Systematic Review. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 4, 2017.

Fraser M, Lombardi B*, Wu S*, Zerden L, Richman E, **Fraher E**. Social Work in Integrated Primary Care: A Systematic Review. Podium presentation. Society for Social Work and Research 21st Annual Meeting. New Orleans, LA, January 2017.

Cotter A*, Viera A, **Fraher E**. Carolina on Their Minds? University of North Carolina MD vs. MD-MPH Graduates: Does Completing an MPH Affect Specialty Choice and Practice Location? Poster. Beyond Flexner Conference. Miami, FL. September 2016.

Freburger JK, Johnson A, Li D, **Fraher E**. Use of Physical and Occupational Therapists Following Stroke: Transitioning from the Acute Care to Community Setting. Podium presentation. Academy Health Annual Research Meeting. Boston, MA. June 2016.

Richman E, **Fraher E**, Gaul, K. How Might the Move Toward Baccalaureate-Prepared Nursing Workforce Affect the Supply of Nurses in Underserved Communities? Podium presentation. Academy Health Annual Research Meeting. Boston, MA. June 2016.

Freburger JK, Li D, Johnson A, **Fraher E**. Use of Physical & Occupational Therapists Following Stroke: Understanding the Care Pathway from the Acute Care to Community Setting. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Chicago, IL. May 6, 2016.

Bacon T, **Fraher E**, Spero J. Medical Education in North Carolina: Using Data to Inform Public Policy Decisions. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Chicago, IL. May 6, 2016.

Richman E, **Fraher E**, Gaul, K. The Nursing Workforce in North Carolina: Challenges and Opportunities. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Chicago, IL. May 5, 2016.

Richman E, Spero J, **Fraher E**. Does the Race and Ethnicity of North Carolina's Health Workforce Reflect the Diversity of the Population? Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Chicago, IL. May 5, 2016.

Fraher E, Richman E, Gaul K. The Nursing Workforce in North Carolina: Academic Progression and New Roles in a Transformed System. Podium presentation. 2015 North Carolina Statewide AHEC Conference. Greensboro, NC. September 11, 2015.

Spero J, **Fraher E**. Medical Education in North Carolina: What is the Return on Investment? Podium presentation. 2015 North Carolina Statewide AHEC Conference. Greensboro, NC. September 11, 2015.

Richman E, **Fraher E**, Gaul K. The North Carolina Mental Health and Substance Abuse Workforce. Podium presentation. 2015 North Carolina Statewide AHEC Conference. Greensboro, NC. September 10, 2015.

Spero J, Narváez S*, Bacon T, **Fraher E**. Envisioning the Future Optometry Workforce in North Carolina: A Case Study of the Use of Health Workforce Data to Make a Decision about a New Optometry School. Podium presentation. 2015 North Carolina Statewide AHEC Conference. Greensboro, NC. September 10, 2015. 6

Johnson A, **Fraher EP**, Morgan P. Comparison of Specialty Distribution of Nurse Practitioners and Physician Assistants in North Carolina, 1997-2013. Poster. AcademyHealth Annual Research Meeting. Minneapolis, MN. June 16, 2015.

Machta R*, **Fraher EP**, Halladay J. The Workforce Transformations Needed to Staff Value-Based Models of Care. Poster. AcademyHealth Annual Research Meeting. Minneapolis, MN. June 16, 2015.

Fraher E, Knapton A. Swimming Upstream: A Workforce Model That Does Not Project a Physician Shortage in the United States. Podium presentation. International Health Workforce Collaborative. London, England, May 14, 2015.

Narvaez S*, Spero J, Bacon T, **Fraher EP**. Envisioning the Future Optometry Workforce in North Carolina: A Case Study of the Use of Health Workforce Data to Influence the Decision about Opening a New Optometry School. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. April 30, 2015.

Golden BA*, Spero J, **Fraher EP**. You Can Go Home Again: Understanding the Long-Term Practice Patterns of a Cohort of University of North Carolina School of Medicine Graduates. Poster. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. April 30, 2015.

Fraher EP, Dall T, Dill M, Moore J. Making Sense of Health Workforce Projections: Where We Are Now and Where Do We Need to Go? Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. April 30, 2015.

Knapton A, **Fraher EP**. Using Workforce Data to Drive Graduate Medical Education Investments. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. April 30, 2015.

Fraher E, Spero J, Ricketts TC, Rockey P. Graduate Medical Education in the United States: Lessons Learned from State-Based Initiatives. Podium presentation. AcademyHealth Annual Research Meeting. San Diego, CA. June 9, 2014.

Fraher E, Li Y*. How Many Nurse Practitioners in Primary Care? There Are Significant Differences Depending on How You Count Them. Podium presentation. AcademyHealth Annual Research Meeting. San Diego, CA. June 8, 2014.

Fraher E, Li Y*. How Many Nurse Practitioners in Primary Care? There Are Significant Differences Depending on How You Count Them. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 2, 2014.

Fraher E, Spero J, Ricketts TC, Rockey P. Graduate Medical Education in the United States: Lessons Learned from State-Based Initiatives. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 2, 2014.

Knapton A, **Fraher E**, Jolly P. It's Complicated: Quantifying the Magnitude, Timing and Effect of Branching and Switching during Graduate Medical Education. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 1, 2014.

Spero J, Del Grosso C*, **Fraher E**. Supply, Demand, and New Roles for the Pharmacist Workforce: A North Carolina Case Study. Podium presentation. Association of American Medical Colleges Health Workforce Research Conference. Washington, DC. May 1, 2014.

Fraher E. Health Workforce Modeling: Past, Current and Future Challenges. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 3, 2013.

Fraher E, Spero J, Lyons J. State Efforts to Expand Graduate Medical Education: Lessons Learned from North Carolina. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 2, 2013.

Morrison M*, **Fraher E**. Do urban and non-urban physicians in the same specialty provide different types of services? Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 2, 2013.

Fraher E. Physician Workforce Planning (?) and Modeling in the United States. Podium presentation. OECD Expert Group on Health Workforce Planning and Management. Paris, France. September 17, 2012.

Fraher E, Quach C*, Dill J. Do We Have the Workforce Needed to Broadly Implement Patient Centered Medical Homes? Podium presentation. AcademyHealth Annual Research Meeting. Orlando, FL. June 24, 2012.

Fraher E. Gaul K, Lyons J. One State's Effort to Track the Social Accountability of Undergraduate Medical Education. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 3, 2012.

Holmes M, **Fraher E**, Knapton A. Developing an Open Source Simulation Model of Physician Supply and Health Care Utilization. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 3, 2012.

Fraher E. Health Workforce Planning in the United States? Podium presentation. Workforce Solutions: Time for Innovations, Renovations or Demolition? University of Melbourne, Melbourne, Australia. October 28, 2011.

Fraher E, Salsberg E, Cormack M, Gorman D, Freschette D. Health Workforce Planning in the United States, Australia, New Zealand and Canada. Podium presentation. International Health Workforce Collaborative. Brisbane, Australia. October 24, 2011.

Fraher E. Generational Differences in Physician Practice Behaviors. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 5, 2011.

Kimball M*, Lyons J, Gaul K, **Fraher E.** The State of Allied Health in North Carolina: An overview of issues and opportunities for the allied health workforce. Poster. Association of Schools of Allied Health Programs. October 21, 2010. Charlotte, NC.

Gaul K, **Fraher E.** North Carolina's Efforts To Enhance The Allied Health Care Workforce Analytical Infrastructure Needed To Support Health Care Reform. Podium presentation. Association of Schools of Allied Health Programs. Charlotte, NC. October 20, 2010.

Knapton A, **Fraher E,** Ricketts TC. Forecasting the Supply of the US Surgical Workforce: Drawing on the Experience of the National Health Service. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. May 6, 2010.

Fraher E. They Don't Call It Social Mission in the United Kingdom. Podium presentation. International Medical Workforce Collaborative Conference. New York, NY. May 3, 2010.

Fraher E. Cutting Time: How Hours Spent in Clinical Care Vary for General Surgeons in Different Birth Cohorts. Podium presentation. AcademyHealth Annual Research Meeting. Chicago, IL. June 28, 2009.

Fraher E. Implications of Resident Work Hour Restrictions for Surgical Workforce Planning: The US and UK Experience. Podium presentation. Association of American Medical Colleges Annual Workforce Meeting. Washington, DC. April 30, 2009.

Morgan P, **Fraher E.** Mobility of North Carolina Physician Assistants and Nurse Practitioners between Primary Care and Non-Primary Care Specialties: A Longitudinal Study. Podium presentation. Association of American Medical Colleges Physician Workforce Research Conference. Washington, DC. April 30, 2009.

Fraher E. Uncommitted Gen Xers or Workaholic Boomers? How Hours Spent in Clinical Care Vary for General Surgeons in Different Birth Cohorts. Poster. International Medical Workforce Conference. Edinburgh, Scotland. September 19, 2008.

Fraher E. Uncommitted Gen Xers or Workaholic Boomers? An Analysis of Age, Gender, Cohort and Period Effects on Hours Worked in Patient Care. Plenary presentation. International Medical Workforce Conference. Edinburgh, Scotland. September 17, 2008.

Fraher E. Shaping Health Workforce Policy through Data-Driven Analyses: The Sheps/NC AHEC Collaboration. Podium presentation. National AHEC Organization. Denver, CO. June 30, 2008.

King J*, **Fraher E,** Ricketts TC, Charles A, Sheldon G, Meyer A. Characteristics of Practice: Rural and Urban General Surgeons in North Carolina. Podium presentation. Association of American Medical College's Physician Workforce Research Conference. Washington, DC. May 1, 2008.

Fraher E. Life Course Theory and Physician Career Trajectories. Podium presentation. International Medical Workforce Conference. Vancouver, BC, Canada. March 25, 2007.

Fraher E, Randolph R, Ricketts TC. Retention of Female Physicians in U.S. Rural Counties, 1991-2003. Poster. International Medical Workforce Conference. Vancouver, BC, Canada. March 24, 2007.

Products of Engaged Scholarship (187 products) (*denotes student)

Monographs and Policy Briefs (61 briefs)

De Saxe Zerden L, Richman EL, Lombardi BM, Shoenbill K, **Fraher E**. Social Work and Electronic Health Records: A New Frontier for Health Workforce Research. Carolina Health Workforce Research Center. November 2019.

Ricketts TC, **Fraher E**, Kandrack R. Assessing the Value of Pediatric Graduate Medical Education in Meeting State and National Needs. Carolina Health Workforce Research Center. February 2019.

Kandrack R, **Fraher E**, Ricketts TC. Title VII funding not associated with practice outcomes in cross-sectional study of physicians graduating medical school between 2004-2010. Carolina Health Workforce Research Center, UNC CH. September 2018.

Gaul K, **Fraher E**. Engaging Stakeholders to Advance State Health Workforce Policy. Health Workforce Technical Assistance Center. February 2018.

Fraher EP, Spero JC, Galloway E, Terry J. The Workforce Outcomes of Physicians Completing Residency Programs in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. January 2018.

Spero JC, **Fraher EP**. Workforce Outcomes of North Carolina Medical School Graduates: A Report to the Joint Legislative Oversight Committee on Health and Human Services and the Joint Legislative Education Oversight Committee. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill. January 2018.

Spero JC, Bacon TJ, Galloway E, Ricketts TC, Massey J*, Petiwala Z*, **Fraher EP**. Evaluation of a Potential New Health Sciences School at The University of North Carolina at Pembroke to Meet the Needs of the Region and State. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill. December 2017.

Fraher E, Richman E, Galloway E, Knapton A. DocFlows: A Web-Based, Interactive App to Explore the Interstate Migration of Residents-in-Training and Practicing Physicians. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. August 2017.

Tierney EK*, Ricketts TC, Knapton A, **Fraher EP**. FutureDocs: Nation has Enough Physicians to Meet the Nation's Overall Needs – For Now. Distribution to Worsen. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. April 2017.

Bacon T, Gaul K, **Fraher E**. Health Workforce Data and Policy: A North Carolina Overview. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. February 2017.

Gaul K, Bacon T, **Fraher E**. Health Workforce Data and Policy: Reports Used to Inform Policy in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. February 2017.

Bacon T, Gaul K, **Fraher E**. Health Workforce Data and Policy: How Stakeholders Use Data in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. February 2017.

Bacon T, Gaul K, **Fraher E**. Health Workforce Data and Policy: Using Data to Evaluate the Need for New Educational Programs. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. February 2017.

Fraher E, Spero JC, Bacon T. State-Based Approaches to Reforming Medicaid-Funded Graduate Medical Education. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. January 2017.

Lefebvre A, McCaskill M, Reiter K, Mose J*, **Fraher E**, Newton W. The Role of Practice Facilitators in Meeting the HIT Needs of Rural Practices. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. January 2017.

Fraser M, Lombardi B*, Wu S*, Zerden L, Richman E, **Fraher E**. Social Work in Integrated Primary Care: A Systematic Review. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. September 2016.

Lavoie KA*, Terry J, Gaul K, Spero JC, **Fraher E**. Where did North Carolina Physicians Complete Residency? Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. June 2016.

Fraher EP, Richman EL. The Contribution of the University of North Carolina at Chapel Hill to the State's Physician Workforce. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. June 2016.

Domino ME, Lin CC*, Morrissey J, Ellis AR, **Fraher E**, Gaul K, Richman E, Thomas K. The Psychologist Workforce in North Carolina: Expanding Access for Patients in Rural Areas. Cecil G. Sheps Center for Health Services Research. June 2016.

Gaul K, Moore J, **Fraher E**. Collaborating with Licensing Bodies in Support of Health Workforce Data Collection: Issues and Strategies. Health Workforce Technical Assistance Center, SUNY-Albany. May 2016.

Fraher EP, Lavoie KA*, Gaul K. Where did North Carolina Physicians Go To Medical School? Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2016.

Fraher E, Machta R*, Halladay J. The Workforce Transformations Needed to Staff Value-Based Models of Care. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. November 2015.

Fraher E, Spero J. The State of the Physician Workforce in North Carolina: Overall Physician Supply Will Likely Be Sufficient but Is Maldistributed by Specialty and Geography. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. August 2015.

Fraher E, Spetz J, Naylor M. Nursing in a Transformed Health Care System: New Roles, New Rules. LDI/INQRI Research Brief. June 2015.

Morgan P, Johnson A, **Fraher EP**. Comparison of Specialty Distribution of Nurse Practitioners and Physician Assistants in North Carolina, 1997-2013. Carolina Health Workforce Research Center, Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2015.

Spero JC, Narváez S*, Bacon T, **Fraher EP**. Envisioning the Future Optometry Workforce in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2015.

Gaul K, **Fraher EP**. State-Level Health Workforce Data Collection, Analysis, and Dissemination: An Introduction. Health Workforce Technical Assistance Center, SUNY-Albany. February 2015.

Spero JC, Del Grosso C*, **Fraher EP**. Pharmacists in North Carolina: Steady Numbers, Changing Roles. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. February 2014.

Spero J, **Fraher E**, Ricketts TC, Rockey P. GME in the United States: A Review of State Initiatives. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. September 2013. http://www.shepscenter.unc.edu/wp-content/uploads/2013/09/GMEstateReview_Sept2013.pdf

Fraher E, Gaul K, Spero J. 2013a. How States Can Develop Better Nursing Workforce Data Systems. Princeton, NJ: Robert Wood Johnson Foundation. November 2013.

Fraher E, Gaul K, Spero J. 2013b. What Data States Can Collect to Build Better Nursing Workforce Data Systems. Princeton, NJ: Robert Wood Johnson Foundation. November 2013.

Fraher E, Gaul K, Spero J. 2013c. Why States Need to Build Better Nursing Workforce Data Systems. Princeton, NJ: Robert Wood Johnson Foundation. November 2013.

Fraher E, Spero J, Lyons J, Newton H*. Trends in Graduate Medical Education in North Carolina: Challenges and Next Steps. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2013.

Fraher E, Newton H*, Lyons J. Trends in Medical Education in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. September 2012.

McGee V, **Fraher E**. The Diversity of North Carolina's Workforce. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. August 2012.

Alcorn E*, Gaul K, **Fraher E**. Allied Health Vacancy Report. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2012.

Chapman S, Donini-Lenhoff F, **Fraher E**, Salsberg E, Swift R, Harris TA, Asheroff A, Herdman R. Allied Health Workforce and Services: Workshop Summary. National Institute of Medicine (IOM). 2011. Washington DC: National Academies Press.

Kimball M*, **Fraher E**, Gaul K, Lyons J. Allied Health Job Vacancy Tracking Report. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. May 2011.

Kimball M, Lyons J, Gaul K, **Fraher E**. The State of Allied Health in North Carolina. Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. October 2010.

Fraher EP, Gaul K, Carpenter JM, Hadley HL. Trends in the Supply of Pharmacists in North Carolina. North Carolina Health Professions Data System Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research. March 2010.

Fraher E, Knapton A. Migration Patterns of the Recently Trained Medical Workforce. NHS Workforce Review Team. January 2010.

Belsky D*, Ricketts TC, Poley S, Gaul K, Fraher E, Sheldon G. Surgical Deserts in the US: Places Without Surgeons. American College of Surgeons Health Policy Research Institute, Cecil G. Sheps Center for Health Services Research. July 2009.

Poley S, Belsky D*, Gaul K, Ricketts TC, Fraher E, Sheldon G. Longitudinal Trends in the U.S. Surgical Workforce 1981-2006. American College of Surgeons Health Policy Research Institute, Cecil G. Sheps Center for Health Services Research. July 2009.

Fraher E, Belsky D*, Carpenter J, Gaul K. A Study of Associate Degree Nursing Program Success: Evidence from the 2002 Cohort. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. October 2008.

Fraher E, McKethan A*, Broome SJ, Haygood MK, Heilig KE. North Carolina Hospital Workforce Trend Analysis, 2004-2006. North Carolina Hospital Association. July 2008.

Gaul K, **Fraher E**, Guild P, Ricketts T, Hadley H, Darter J. Trends in Licensed Health Professions in North Carolina, 1979-2005. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. June 2007.

Ricketts T, **Fraher E**, King J*. AHECs and Health Workforce Planning and Analysis. *The National AHEC Bulletin*. Spring 2007.

King J*, **Fraher E**, Ricketts T. Informing State Workforce Policy: 30 Years of Collaboration between the NC AHEC and the NC Health Professions Data System. *The National AHEC Bulletin*. Spring 2007.

Fraher E, Summers P*, Rutledge S, Gaul K. Allied Health Job Vacancy Report. The Council for Allied Health in North Carolina. April 2007.

Fraher E, Gaul K, King J*, Hadley, de la Varre C, Ricketts TC. Trends in the Supply of Dentists in North Carolina, 1996-2005. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. February 2007.

Fraher E, McKethan A*. Allied Health: Jobs for North Carolinians. *Carolina Context*. The Program on Public Life, UNC. October 2006.

Thaker S*, **Fraher E**, King J*. Allied Health Job Vacancy Report. The Council for Allied Health in North Carolina. August 2006.

Fraher E, Swartz M, Gaul K. The Supply and Distribution of Psychiatrists in North Carolina: Pressing Issues in the Context of Mental Health Reform. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. January 2006.

Fraher E, Shadle J*. The Supply of Primary Care Physician Assistants and Nurse Practitioners in Underserved North Carolina. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. July 2005.

Livengood R*, **Fraher E**, Dyson SL. Allied Health Vacancy Report. The Council for Allied Health in North Carolina. May 2005.

Fraher E, McKethan A*, Livengood R*, Gaul K, de la Varre C. The State of Allied Health in North Carolina: An Overview of Issues and Opportunities for the Allied Health Workforce. *The Council for Allied Health in North Carolina, North Carolina AHEC Program and the Cecil G. Sheps Center for Health Services Research*. May 2005.

Dyson SL, **Fraher E**, Wilkins RB, Smith LM. "Scanning the Radiologic Sciences Workforce in North Carolina: A Report of the Technical Panel on the Radiologic Sciences Workforce" The Council for Allied Health in North Carolina. July 2003.

Fraher E, Shadle J*, Smith L. Trends in the Supply of Nurse Practitioners and Physician Assistants in North Carolina, 1990-2001. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. June 2003.

Dyson S, **Fraher E**, Smith L. The Health Information Management Workforce in North Carolina: Current Trends, Future Directions. A Report of the Technical Panel on the Health Information Management Workforce. The Council for Allied Health in North Carolina. October 2002.

Fraher E, Smith L, Dyson S, Ricketts TC. The Pharmacist Workforce in North Carolina. North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research. August 2002.

Ricketts TC, **Fraher E**, et al. An Evaluative Study of the Area Health Education Centers Program. A report submitted to the Division of State, Community and Public Health. Bureau of Health Professions, Health Resources and Services Administration. August 2002.

*Legislative and Policy Presentations (33 presentations) (*denotes student)*

Fraher E, Spero J, Evan G, Thomas S, Wilson H. How Data and Evidence Can (and Should!) Inform Scope of Practice. North Carolina Institute of Medicine Legislative Health Policy Fellows. Morrisville, NC. December 9th, 2019.

Fraher E. A Transformed Health Care System Requires A Transformed Workforce. National Academy of Medicine Vital Directions for Health and Health Care Symposium. Raleigh, NC. November 21st, 2019.

Fraher E. Special Needs in Rural America and Implications for Workforce Education and Training. Council on Graduate Medical Education. Washington DC. June 5, 2019.

Fraher E, Spero J, Galloway E. Health Workforce Research and Collaborations Underway at the Sheps Center to Address Population Health Needs in North Carolina. North Carolina DHHS. April 18, 2019.

Fraher E. A Copernican Revolution in Graduate Medical Education: Putting Patients' Health Care Needs at the Center of GME Discussions. The Robert Graham Center Primary Care Forum: Senate Staffer Briefing. Washington DC. March 20, 2019.

Fraher E, Knapton A, Holmes GM. A Plasticity Approach that Recognizes Overlapping and Dynamic Scopes of Services in Team-Based Models of Care. Keynote presentation to HRSA Expert Advisory Committee on Behavioral Health Workforce Modeling. Rockville MD. October 1, 2018.

Fraher E. Redesigning Graduate Medical Education to Better Meet Population Health Needs. Testimony to United States House of Representatives Committee on Veterans' Affairs. Washington DC. June 8, 2018.

Fraher E, Spero J, Kandrack R, Gaul K. How Data and Evidence Can (and Should!) Inform Scope of Practice. North Carolina Institute of Medicine Legislative Health Policy Fellows. Morrisville, NC. April 9, 2018.

Fraher E, Spero J, Galloway E. North Carolina's Physician Training Programs Are Not Producing the Workforce Needed to Meet Population Health Needs. Presentation to the North Carolina General Assembly's Joint Oversight Subcommittee on Medical Education Programs and Medical Residency Programs. Raleigh NC. February 12, 2018.

Fraher E. Lessons Learned from State-Based Approaches to Reforming Medicaid-Funded Graduate Medical Education. Presentation to the GME Outcomes and Metrics Workshop, National Academy of Medicine. October 11, 2017.

Fraher E. Toward a National Strategic Plan for GME: Stakeholders, Data and Innovative State Approaches. Presentation to the Council on Graduate Medical Education, Health Resources and Services Administration. Baltimore, MD. April 7, 2016.

Fraher E. The Sticky Wicket of Projecting Physician Workforce Needs. Presentation to Congressional staffers, staff from the Executive Branch and Department of Health and Human Services at the National Health Policy Forum. Washington, DC. March 4, 2016.

Fraher E. The Nursing Workforce in North Carolina: Trends and Challenges. Presentation to the North Carolina General Assembly's Joint Legislative Workforce Development System Reform Oversight Committee. Raleigh, NC. March 1, 2016.

Brandt B, **Fraher E.** How Many Doctors, Nurses and Other Health Professionals Do You Need? The Impact of New Delivery Systems on Your State's Health Workforce Needs. Keynote presentation to the National Governors Association meeting on Learning from Each Other: How States Are Transforming Their Health Systems. Washington DC. April 22, 2015.

Fraher E. Physician Shortages: What If We Actually Used Data to Shape GME Policy? Presentation to Medicare Payment Advisory Commission (MedPAC) senior staff. Washington DC. April 13, 2015.

Fraher EP, Machta R*, Halladay J. The Workforce Needed to Staff Value-Based Models of Care. Keynote Presentation to Congressional staffers, staff from the Executive Branch and Department of Health and Human Services at the National Health Policy Forum. Washington DC. February 20, 2015.

Fraher EP. A Primer on the Health Workforce in the United States. Keynote Presentation to Congressional staffers, staff from the Executive Branch and Department of Health and Human Services at the National Health Policy Forum. Washington DC. February 20, 2015.

Fraher E. North Carolina Physician Supply Forecasts: Data from the FutureDocs Forecasting Tool, Presentation for Dept. of Health & Human Services, Raleigh, NC. February 18, 2015.

Fraher E, Spero J. Trends in the Supply and Distribution of Obstetric Delivery Providers in North Carolina. Presentation to the Joint Legislative Oversight Committee on Health and Human Services, Subcommittee on Midwives. Raleigh, NC. February 26, 2014.

Fraher E. Trends in the Supply and Distribution of the Health Workforce in North Carolina. Presentation to the Committee on Health Care Provider Practice Sustainability and Training/Additional Transparency, North Carolina General Assembly. Raleigh, NC. January 21, 2014.

Fraher E. Trends in the Supply and Distribution of Optometrists in North Carolina. Presentation to the Committee on Health Care Provider Practice Sustainability and Training/Additional Transparency, North Carolina General Assembly. Raleigh, NC. January 21, 2014.

Fraher E. Health Workforce Supply in North Carolina: Future Trends, Opportunities and Challenges. Presentation to the Committee on Health Care Provider Practice Sustainability and Training/Additional Transparency, North Carolina General Assembly. Raleigh, NC. December 16, 2013.

Fraher E. Residency Training in North Carolina: Needs for the Future, Opportunities for Expansion. Presentation to the Committee on Health Care Provider Practice Sustainability and Training/Additional Transparency, North Carolina General Assembly. Raleigh, NC. December 16, 2013.

Fraher E, Spero J, Ricketts TC, Rockey P. Graduate Medical Education in the United States: Lessons Learned from State Initiatives. Presentation to White House, Senate and House staffers at National Health Policy Forum. Washington, DC. October 25, 2013.

Fraher E. Is UNC Preparing the Allied Health Workforce North Carolina Will Need Now and in the Future? Presentation to the UNC Board of Governors' Education Planning Committee. Chapel Hill, NC. June 13, 2013.

Fraher E. State-Level Data Collection: Allied Health Workforce Planning in North Carolina. Presentation to the National Academy of Sciences Institute of Medicine Workshop on Allied Health Services. Washington, DC. May 9, 2011.

Fraher E. Workforce Planning (?) in the United States. Presentation to the National Leadership and Innovation Agency for Health Care and Welsh Assembly Government. Cardiff, Wales. March 9, 2010.

Fraher E. The Nursing Workforce in the United Kingdom: The Need for Better Workforce Data. Presentation to the National Nursing Professional Advisory Board, Department of Health, England. London, England. February 4, 2010.

Fraher E. Shaping Health Workforce Policy through Data-Driven Analyses: Lessons Learned from the Other Side of the Pond. Presentation to the National Allied Health Professional Advisory Board, Department of Health, England. London, England. December 16, 2009.

Fraher E. A Healthy Economy and a Healthy Population: Making the Link between Health Workforce Needs and Economic Development Efforts. Presentation to the National Advisory Committee on Rural Health and Human Services, Office of Rural Health Policy, US Department of Health and Human Services. Chapel Hill, NC. June 2, 2008.

Fraher E. A Healthy Economy and a Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Workers in North Carolina. Presentation to the Advisory Committee on Interdisciplinary, Community-Based Linkages, US Department of Health and Human Services. Washington, DC. May 9, 2008.

Fraher E, McKethan A*. A Healthy Economy and A Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Care Workers in North Carolina. Policy Forum to NC legislators, sponsored by the Program on Public Life, UNC-CH. Chapel Hill, NC. March 13, 2007.

Fraher E, Gaul K, Swartz M. The Supply and Distribution of Psychiatrists in North Carolina: Pressing Issues in the Context of Mental Health Reform. North Carolina Legislature, House Select Committee on Healthcare, Subcommittee on Health Workforce. Raleigh, NC. October 25, 2006.

*Selected Invited Presentations (93 presentations) (*denotes student)*

Page C, Hawes E, Holmes G. **Fraher EP.** The RRPD Program: Year 1 Review. HRSA Rural Residency Program and Development Annual Meeting (Virtual). September 17, 2020.

Fraher EP. Rural Workforce Challenges in the United States: Your Residency Programs are Meeting a Critical Need. HRSA Rural Residency Program and Development Annual Meeting (Virtual). September 17, 2020.

Fraher E. *Family Medicine's Leadership Role in Redesigning Care and Training under Value-Based Care.* Plenary presentation to the Society of Teachers of Family Medicine. August 27, 2020

Fraher E. *The Power of Data to Illuminate the Challenges and Opportunities Facing the Nursing Workforce.* Keynote presentation delivered at the National Forum of State Nursing Workforce Centers. June 11, 2020.

Ricketts TC, Porterfield D, **Fraher E.** *Preventive Medicine Physician Supply and Distribution.* HRSA/BHW/DMD, Preventive Medicine Residency Program Grantee Meeting. May 13, 2020.

Fraher E. *Developing Workforce Models and Data Visualizations that Engage, Educate and Provoke Policy Makers.* Presentation at Children's Hospital of Philadelphia (CHOP) Policy Lab Morning Speaker Series. January 23, 2020.

Fraher E. The Licensed Practical Nurse Workforce of North Carolina. Education & Practice Committee, North Carolina Board of Nursing. Raleigh, North Carolina. November 13th, 2019.

Fraher E, Spero J, Galloway E, Thomas S., Wilson, H. International Health Workforce Collaboration; Data Olympics, invited presentation, winner of the data visualization challenge. Developing Data Visualizations that Educate, Engage and Provoke. Ottawa, Canada. October 21, 2019.

Fraher E. Shaping the Clinical Learning Environment to Meet the Evolving Needs of the Health Care System and Patients. Keynote at NexusSummit2019, National Center for Interprofessional Practice and Education. Minneapolis, MN. August 19, 2019.

Fraher E, Walker K*, Spero J, Galloway E. Access to Obstetric and Prenatal Care Providers in North Carolina. North Carolina Institute of Medicine, Perinatal System of Care. May 2, 2019. Morrisville, North Carolina.

Fraher E, Jones C, Spero J, Galloway E. The Nurse Practitioner Workforce in North Carolina. Presentation to Deans and Directors of NC Nurse Practitioner Education Programs. February 19, 2019. Duke University, Durham NC.

Fraher E. The Health Workforce in the US: Trends and Challenges Facing Efforts to Strengthen Links between Education and Practice. Keynote presentation to the National Academy of Medicine, Global Forum on Innovation in Health Professional Education., Washington, DC, November 13-14, 2018.

Fraher E. Workforce Planning in a Rapidly Changing Health Care System. Webinar in Health System Transformation Concepts Series. University of Rhode Island. October 23, 2018.

Fraher E. Future of the US Physician Workforce: What Can We Expect? Can We Rely on the Current GME System to Get There? Keynote presentation to the Texas Medical Association Council on Medical Education. Austin, TX, September 28, 2018.

Fraher E. Health Workforce Trends and Challenges in North Carolina and the United States. UNC Family Medicine Alumni Weekend, Chapel Hill, April 13, 2018.

Brandt B, **Fraher E**. Toward a System Where Workforce Planning, Education and Practice are Designed around Patients, Populations and Communities, Not Professions. Improving Health Outcomes Through Interprofessional Education and Practice Collaboration, Rhode Island IPE Collaborative. Providence, RI. March 28, 2018.

Fraher E, Spero J, Galloway E, Gaul K, Kandrack R*. The Sheps Center Program on Health Workforce Research and Policy: Providing evidence to support health workforce policy in North Carolina. MAHEC Academic Steering Leadership Group, UNC Health Sciences at MAHEC. Asheville, NC. March 13, 2018.

Fraher E, Spero J, Ricketts T, Galloway E, Gaul K. Key Issues and Challenges Facing the North Carolina Health Workforce. North Carolina Health Deans. Chapel Hill, NC. March 2, 2018.

Brandt B, **Fraher E**. Toward a System Where Workforce Planning, Education and Practice are Designed around Patients, Populations and Communities, Not Professions. Blending the Blues: A Collaboration with IPE4UNC and Duke AHEAD. Chapel Hill, NC. February 21, 2018.

Fraher E, Holmes GM, Knapton A, Kandrack R*. Building physician workforce projections that don't simply answer the question "how many doctors do we need?" Healthforce Center Seminar, UCSF. San Francisco, CA. January 18, 2018.

Frogner B, **Fraher E**, Chapman S. Health Workforce Needs Part 2: Health Care Jobs, Training, and Career Pathways. Webinar. Health Workforce Technical Assistance Center. November 30, 2017.

Fraher E, Petermann V*, Ricketts TC. Care Coordination in the United States. Presentation to 100 cancer nurse navigators at the seminar "Coordonner: un nouveau métier en gestions". Paris, France. November 16, 2017.

Spero J, **Fraher E**. Health Workforce Trends and Challenges in North Carolina and the United States. Rural Hospital Conference of the Carolinas. Charlotte, NC. November 9, 2017.

Fraher E. Workforce Planning for a Rapidly Changing Healthcare System. Webinar. American Hospital Association Workforce Center. November 1, 2017.

Galloway E, **Fraher E**. Developing Data Visualizations for Health Workforce Data. Webinar. Health Workforce Technical Assistance Center. September 26, 2017.

Fraher E. Workforce Planning for Rhode Island's Rapidly Changing Health Care System. Keynote presentation. Executive Office of Health and Human Services' Healthcare Workforce Summit. Warwick, RI. June 16, 2017.

Fraher E. Nursing Workforce Models: What We Can Learn from State and National Efforts (and the Kiwis). Keynote presentation. National Forum of State Nursing Workforce Centers. Denver, CO. June 8, 2017.

Spero J, Burgette J, **Fraher E**, Galloway E, Gaul K, Ricketts T. NC's Oral Health Workforce: Distribution, Diversity and Access to Care. NC Dental Public Health Education Conference. Wilmington, NC. May 10, 2017.

Fraher E. Graduate Medical Education: Better Data = Better Policy. Action is at State Level. Presentation. Health Workforce Needs in a Time of Transformation. George Washington Health Workforce Institute, Washington, DC. May 3, 2017.

Fraher E. Workforce Planning in a Rapidly Changing Health Care System: The Challenges of Population Health. Keynote presentation. South Carolina Hospital Association and South Carolina Institute of Medicine. Columbia SC. February 13, 2017.

Fraher E, Spero J, Bacon T. State-Based Approaches to Reforming Medicaid-Funded Graduate Medical Education. Presentation. Graduate Medical Education States Initiative Summit, Albuquerque, NM. January 23, 2017.

Fraher E. The Nursing Workforce: Navigating through Transformative Health System Change. Webinar Presentation for Center for Interdisciplinary Health Workforce Studies. Nashville, TN. January 20, 2016.

Fraher E. Future of Nursing Campaign for Action. Webinar. AARP, Robert Wood Johnson Foundation. May 23, 2016.

Fraher E. The Nursing Workforce: Navigating through Transformative Health System Change. Webinar. Vanderbilt Center for Interdisciplinary Health Workforce Studies. January 20, 2016.

Fraher E, Spero J. Addressing Physician Workforce Challenges in NC: How Do We Get Doctors to Go Where We Need Them? Presentation for NC Rural Health Leadership Alliance Subgroup. Cary, NC. October 12, 2015.

Fraher E. How Can We Transform the Workforce to Meet the Needs of a Transformed Health Care System? Keynote presentation. Annual Meeting of the American Association of Medical Assistants. Portland, OR. September 18, 2015.

Richman E, Gaul K, **Fraher E**. The Nursing Workforce in North Carolina: Challenges and Opportunities. Invited presentation. South East Area Health Education Center: Nursing Workforce in Our Region Meeting. Wilmington, NC. August 28, 2015.

Fraher E. The Workforce Needed to Staff Value-Based Models of Care. Webinar. 3RNet. August 18, 2015.

Richman E, Gaul K, **Fraher E**. The Nursing Workforce in North Carolina: Challenges and Opportunities. Invited presentation. Using Our Voice to Build Better Systems Management & Labor Convening on Building a Skilled Workforce for Quality Healthcare Meeting. Washington, DC. July 9, 2015.

Fraher E, Richman E, Gaul K. The Nursing Workforce in North Carolina: Challenges and Opportunities. Plenary presentation at the Robert Wood Johnson Foundation Meeting: Rural Health: Finding Creative Solutions Together. Denver, CO. June 29, 2015.

Richman E, **Fraher E**, Gaul K. The North Carolina Mental Health and Substance Abuse Workforce. Presentation to the North Carolina Institute of Medicine. Morrisville, NC. June 5, 2015.

Fraher E, Richman E, Gaul K. The Nursing Workforce: Challenges and Opportunities. Presentation. North Carolina Board of Nursing. Raleigh, NC. March 26, 2015.

Fraher E, Richman E, Gaul K, The Nursing Workforce: Navigating Through Transformative Health System Change. Keynote presentation. North Carolina AHEC Nurses Council RIBN Journey Meeting. Raleigh, NC. March 17, 2015.

Fraher E, Spero J. Graduate Medical Education: What's Going on in North Carolina and Other States? Presentation. NC Hospital and Health System CEOs/AHEC Directors Meeting. Cary, NC. February 18, 2015.

Fraher E, Richman E, Gaul K. The Nursing Workforce: Challenges and Opportunities. Presentation. North Carolina Community College System: Future of Community College Nursing Education Committee. Raleigh, NC. January 8, 2015.

Fraher E. How Can We Transform the Health Workforce to Meet the Needs of a Transformed Health System? Keynote presentation. Vermont Health Care Workforce Symposium. Burlington, VT. November 10, 2014.

Fraher E. How can we transform the workforce to meet the needs of a transformed health system? Presentation. North Carolina Foundation for Advanced Health Programs. Chapel Hill, NC. November 6, 2014.

Fraher E. Using Workforce Data to Shape GME Policy. Keynote presentation. Graduate Medical Education Summit. Bozeman, MT. October 17, 2014.

Fraher E. FutureDocs Forecasting Tool: Applications to France. Presentation. Ministry of Health (staff). Paris, France. September 9, 2014.

Fraher E. FutureDocs Forecasting Tool: Applications to England. Presentation. Health Education England. London, England. September 8, 2014.

Spero J, **Fraher E**, Ricketts T, Rockey P. Graduate Medical Education in the US: Lessons Learned from State Initiatives. Webinar. CMMI SIM Team. Chapel Hill, NC. May 21, 2014.

Fraher E. Toward developing a better understanding of how physicians change clinical focus during the course of their career. Keynote presentation. American Board of Medical Specialties National Health Policy Forum. Washington, DC. April 25, 2014.

Fraher E, Machta R*, Morrison M*. How Can We Transform the Workforce to Meet the Needs of a Transformed Health System? Webinar. Health Workforce Technical Assistance Center. National webinar with over 120 attendees. April 9, 2014.

Gaul K, **Fraher E**. Trends in the Supply and Distribution of Nurse Practitioners in North Carolina. Keynote presentation. NCNA NP Spring Symposium. Charlotte, NC. April 2, 2014.

Fraher E. How Can We Transform the Workforce to Meet the Needs of a Transformed Health System? Keynote presentation. North Carolina Community College System, Continuing Education Leadership Institute. Raleigh, NC. March 25, 2014.

Gaul K, **Fraher E.** Education Models to Cultivate the Rural Health Workforce. Presentation. Task Force on Rural Health, North Carolina Institute of Medicine. Morrisville, NC. February 5, 2014.

Gaul K, **Fraher E.** Trends in the Supply and Distribution of the Health Workforce in Area L and Beyond. Presentation. Area L AHEC Advisory Committee Meeting. Rocky Mount, NC. January 23, 2014.

Fraher E, Ricketts T, Spero J, Rockey P. Graduate Medical Education in the US: Lessons Learned from the State Initiatives. Presentation. North Carolina AHEC Statewide Conference. Chapel Hill, NC. December 12, 2013.

Fraher E. Are We Preparing the Allied Health Workforce North Carolina Will Need Now and in the Future? Keynote presentation. North Carolina Community College System, Continuing Education Leadership Institute. Raleigh, NC. November 12, 2013.

Fraher E. Are We Preparing the Allied Health Workforce North Carolina Will Need Now and in the Future? Presentation. Council for Allied Health in North Carolina. Chapel Hill, NC. October 16, 2013.

Fraher E, Gaul K. Reconfiguring and Retooling the Workforce to Meet the Needs of a Transformed Health System. Presentation. Illinois Health Care Workforce Planning Retreat. Chicago, IL. September 12, 2013.

Fraher E, Gaul K, Spero J. Reconfiguring and Retooling the Workforce to Meet the Needs of a Transformed Health System. Presentation. Connecticut Health Care Workforce Planning Retreat. Hartford, CT. August 7, 2013.

Fraher E. Retooling and Reconfiguring North Carolina's Health Workforce to Meet the Demands of a Transformed Health Care System. Invited lecture. Duke-National University Singapore Medical School. Singapore. June 20, 2013

Fraher E. Reconfiguring and Retooling the Workforce to Meet the Needs of a Transformed Health System. Keynote presentation. H2P Consortium National Advisory Council Meeting. Charleston, SC. April 15, 2013.

Fraher E. Retooling and Reconfiguring North Carolina's Health Workforce to Meet the Demands of a Transformed Health Care System. Keynote presentation. NC AHEC Future of Community-Based Education Conference. Chapel Hill, NC. March 21, 2013.

Fraher E. Retooling and Reconfiguring North Carolina's Health Workforce to Meet the Demands of a Transformed Health Care System. Keynote presentation. American National Standards Institute's Health Care Competency Collaborative. Novi, MI. March 19, 2013.

Fraher E, Spero J. The Dental Workforce in North Carolina: Trends, Challenges and Opportunities. Keynote presentation. North Carolina Dental Public Health Educational Conference. Cary, NC. March 5, 2013.

Fraher E. Trends in Graduate Medical Education in North Carolina and the United States. Presentation. NC Hospital and Health System CEOs/AHEC Directors Meeting. Cary, NC. February 20, 2013.

Fraher E. Retooling and Reconfiguring North Carolina's Health Workforce to Meet the Demands of a Transformed Health Care System. Keynote presentation. North Carolina AHEC Statewide Conference. Raleigh, NC. September 21, 2012.

Fraher E, McGee V. The Status of Health Workforce Diversity in North Carolina. Keynote presentation. 2012 North Carolina Health Professions Diversity Conference. Charlotte, NC. August 29, 2012.

Fraher E. Allied Health Workforce Planning: What North Carolina Can Learn from New Zealand. Presentation. Council for Allied Health in North Carolina. Chapel Hill, NC. May 16, 2012.

Fraher E. Aligning Graduate Medical Education with Surgical Workforce Needs. Presentation. Council of Medical Specialty Societies, GME Financing Conference. Chicago, IL. May 10, 2012.

Fraher E. Primary Care (and Other) Workforce Trends in North Carolina. Presentation. NC Hospital and Health System CEOs/AHEC Directors Meeting. Cary, NC. February 16, 2012.

Fraher E. Trends in Medical Education in North Carolina. UNC School of Medicine Teaching Faculty Retreat. Chapel Hill, NC. November 1, 2011.

Fraher E. Shaping Physician Workforce Policy through Data-Driven Analyses: The North Carolina Experience. American Medical Association Webinar on Strategies to Expand GME in the United States. May 20, 2011.

Fraher E. The State of Allied Health in North Carolina: From White Water Rafting to Ice Hockey. Council for Allied Health in North Carolina. Chapel Hill, NC. May 18, 2011.

Fraher E, McGee V, Carpenter J, Lyons J, Gaul K. Trends in the Supply, Distribution and Employment of Dentists in North Carolina. North Carolina Institute of Medicine. Morrisville, NC. April 26, 2011.

Fraher E. Assessing the Workforce Needs of Patient Centered Medical Homes in North Carolina. North Carolina Statewide Summit on the Nursing Workforce. Raleigh, NC. April 11, 2011.

Fraher E, Knapton A, Ricketts TC. Forecasting the Supply of Surgeons in the United States. American College of Surgeons Health Policy Research Institute Advisory Board Meeting. Chapel Hill, NC. February 28, 2011.

Fraher E. North Carolina's Health Workforce in the World of Reform and Budget Crunch. North Carolina Grantmakers Annual Meeting. Greensboro, NC. February 23, 2011.

Fraher E. Shaping Physician Workforce Policy through Data-Driven Analyses: The North Carolina Experience. Keynote presentation. American Medical Association's 2011 State Legislative Strategy Conference. Bonita Springs, FL. January 7, 2011.

Fraher E. The North Carolina Health Professions Data System. Health Resources and Service Administration (HRSA) Uniform Minimum Health Professional Dataset Project. Washington, DC. December 1, 2010.

Fraher E. The Importance of Data in Physician Workforce Planning and Policy. Keynote presentation. American Medical Association Center for Transforming Medical Education and Advocacy Resource Center's Conference on State-Based Graduate Medical Education (GME) and Medical Workforce Summit. Chicago, IL. November 19, 2010.

Fraher E, Gaul K. Shaping Allied Health Workforce Policy through Data Driven Analyses. Presentation. Health Professions Network. Raleigh, NC. October 13, 2010.

Fraher E. Workforce Planning in the New World. Presentation. North Carolina Institute of Medicine. Morrisville, NC. September 21, 2010.

Fraher E. Slacker Generation Xers or Workaholic Boomers? Generational Difference in Doctors' Practice Behaviors. Presentation. National Primary Care Research and Development Centre, Manchester University. Manchester, England. March 16, 2010.

Fraher E, Curson J. Workforce Planning in Difficult Economic Conditions. Presentation. HSJ World Class Workforce Conference. London, England. January 19, 2010.

Fraher E. International Nursing Migration. Presentation. National Health Service Confederation's Academic Special Interest Group. Liverpool, England. December 9, 2009.

Fraher E. Informing the Surgical Workforce Agenda: The American College of Surgeons Health Policy Institute. Presentation. American Medical Association Council on Medical Education. Orlando, FL. November 7, 2008.

Fraher E, Belsky D*, Carpenter J, Gaul K. A Study of Associate Degree Nursing Program Success: Evidence from the 2002 Cohort. Presentation. North Carolina Association of Community College Presidents. Wentworth, NC. October 23, 2008.

Fraher E, Belsky D*, Carpenter J, Gaul K. A Study of Associate Degree Nursing Program Success: Evidence from the 2002 Cohort. Presentation. State Board of the North Carolina Community College System. Raleigh, NC. October 17, 2008.

Fraher E. Tracking the Rising Demand for Allied Health Workers in North Carolina: Implications for the North Carolina Community College System. Presentation. Annual North Carolina Community College System Conference. Raleigh, NC. October 15, 2008.

Fraher E, Belsky D*, Carpenter J, Gaul K. A Study of Associate Degree Nursing Program Success: Preliminary Findings. Presentation. Presentation. North Carolina Community College System, President and Senior Leadership. Raleigh, NC. April 30, 2008.

Fraher E, Gaul K, McKethan A*. A Healthy Economy and a Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Workers in North Carolina. Keynote presentation. Allied Health Regional Skills Partnership Kickoff Meeting. Raleigh, NC. January 24, 2008.

Fraher E, Gaul K, McKethan A*. A Healthy Economy and a Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Workers in North Carolina. Presentation. Area L AHEC Allied Health Regional Skills Partnership. Rocky Mount, NC. December 7, 2007.

Fraher E, Gaul K, McKethan A*. A Healthy Economy and a Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Workers in North Carolina. Presentation. Economic Development Partnership Committee of NC Commission on Workforce Development. Cary, NC. October 10, 2007.

Fraher E, McKethan A*. A Healthy Economy and a Healthy Population: Why We Need to Pay Attention to the Rising Demand for Allied Health Workers in North Carolina. Keynote presentation. Conference on The

Impact of Health Care and the Allied Health Workforce on North Carolina's Economy. Chapel Hill, NC. June 15, 2007.

Digital and Interdisciplinary Scholarship

Research in digital format

Led interdisciplinary teams that developed innovative health workforce data visualizations:

- **DocFlows**. 2016-2017. The DocFlows model is an interactive data visualization tool that shows state-to-state moves by residents and active practicing physicians by specialty. Available at <http://docflows.unc.edu/index.php/>.
- **North Carolina Health Workforce Supply**. 2015-present. This data visualization tool provides users access to licensure data to help them make informed decisions about the education, recruitment and practice of health professionals in NC. Available at <https://nhealthworkforce.unc.edu/>.
- **The FutureDocs Forecasting Tool**. 2011-present. This interactive physician model estimates the supply of physicians, use of physician services, and capacity of the physician workforce to meet future use of health services at the sub-state, state and national levels. Available at <https://www2.shepscenter.unc.edu/workforce>.

Published Interviews

Health care workforce transformation: redesigning our workforce around patient needs. In: New Horizons, After Reform: Transformation. Ernest & Young's Health Sector Report 2015-16.

Select media coverage of research

NC's rural provider shortage persists despite decades of efforts. [NC Health News](#), September 8, 2020.

"Interview with Dr. Erin Fraher on opportunities for expanding health workforce capacity during the Covid-19 pandemic. [New England Journal of Medicine podcast](#). June 2020.

"On National Nurses' Day, These Critical Health Care Workers Are More in the Spotlight". [NC Health News](#), May 7 2020.

"How our Healthcare Workforce is Adapting to COVID-19: A Q&A with GSPP Alum Erin Fraher." [Goldman School of Public Policy-- News Center](#). April 24, 2020.

"A 'new norm' after the coronavirus pandemic." [NC Health News](#), April 12, 2020.

Contributor to the episode entitled *Match Day* on the [Trade Offs Podcast](#), March 20, 2020.

"The Doctor Gap: A Training Program for Country-Doc Wannabes". [US News and World Report](#), March 17, 2020.

The Doctor Gap: Does America Have a Physician Shortage? [US News and World Report](#), March 16, 2020.

"The urban/rural divide for NC doctors is growing. Here's how to fix it." December 16, 2019. [North Carolina Business Journal](#).

"Training the Next Generation of Doctors & Nurses." October 31, 2018; <https://www.nytimes.com/2018/10/31/education/learning/next-generation-of-caregivers.html>

"UNC Program Builds Rural Care Pipeline of Minority Doctors and Dentists" August 01, 2018; <http://www.wunc.org/post/unc-program-builds-rural-care-pipeline-minority-doctors-and-dentists#stream/0>

Wanted: Rural Health Providers, But Few Answer the Call. *North Carolina Health News*. March 2, 2018.

Team Approach to Health Care Means New Role for Doctors. *Stateline*. October 25, 2017.

Collaboration with *Politico*, written as The Doctor of the Future. Reprinted in *The Huffington Post*.

New Tool Helps Predict Distribution of Clinical Services. *Health Data Management*. July 25, 2017.

NP, PA Workforce Growth Could Address Physician Shortage. *MedPage Today*. May 7, 2017.

No Nursing Shortage in N.C., Unless You're Rural. *North Carolina Health News*. March 10, 2016.

Physician Shortage Reports Casts Shadows on Some Counties. *Triangle Business Journal*. August 28, 2015.

Affordable Care Act Fails to Address Physician Shortages—Here's How We Can Deal with This Challenge. *Forbes*. October 21, 2014.

Report: Growth in Two NC Regions May Bring a Doctor Shortage. *WUNC 91.5 North Carolina Public Radio*. September 13, 2014.

NC Considers Whether It Could Train (And Retain) Its Own Optometrists. *WUNC 91.5 North Carolina Public Radio*. August 7, 2014.

7 things for ASC leaders to know for Thursday. *Becker's ASC Review*. August 7, 2014.

New physician shortage tool models physician shortages by area, specialty. *Becker's Hospital Review*. August 5, 2014.

Charlotte faces larger doctor shortage than other areas across North Carolina. *Charlotte Business Journal*. August 5, 2014.

Modeling tool sheds insight on physician workforce needs. *FierceHealthIT*. August 4, 2014.

Raleigh faces larger doc shortage than Durham or Chapel Hill. *Triangle Business Journal*. August 4, 2014.

Online Tool Predicts Physician Shortages at Local, National Levels. *iHealthBeat*. August 1, 2014.

UNC-CH researchers build online tool that predicts doctor shortages. *Modern Healthcare*. July 31, 2014.

Modeling the future physician workforce. *Healthcare Finance News*. July 30, 2014.

What is the solution to addressing US physician shortages? *EHR Intelligence*. July 30, 2014.

UNC-CH researchers build online tool that predicts doctor shortages. *News & Observer*. July 30, 2014.

UNC develops tool to predict doctor shortages. *The Herald Sun*. July 30, 2014.

Jobs at risk as Mission eyes deep budget cuts. *Citizen-Times*. July 29, 2014.

Committee looks at how to keep more physicians in NC. *Time Warner Cable News*. December 16, 2013.

TEACHING ACTIVITIES

UNC Chapel Hill

Courses

- 2013-present Research and Policy Advisor, Hillman Scholars program, UNC-CH School of Nursing. The Hillman program provides a Bachelor of Science in Nursing and a PhD in Nursing in 5 years. My role is to help foster linkages to the larger campus and health services research community, mentor students and lecture in the seminar series.
- May 2017 Instructor for FMME 407, Directed Studies I course with Allison Cummings on Developing a Better Understanding of Medical Assistants' Roles and Functions in Primary Care Settings.
- 2012 Co-Instructor, HPM 563. I co-taught "Health Workforce Policy" for medical, nursing, public health and other post-graduate students at the University of North Carolina at Chapel Hill.

Course Lectures

- 2020 September 2020. "The Art of Robust and Sexy Policy Analyses". HPM789, Gillings School of Global Public Health, UNC-CH.
- 2020 January 2020. "Health Workforce Trends and Challenges in North Carolina and the United States," Family Medicine Year 2 residents, UNC-Chapel Hill, NC.
- 2019 December 2019. "Health Workforce Trends and Challenges in North Carolina and the United States," Family Medicine Year 2 residents, UNC-Chapel Hill, NC.
- 2019 November 2019. "Data Analysis Tips & Tricks," RJW Data Webinar, FNS Cohort 5. Webinar.
- 2019 November 2019. "A Primer on the Health Workforce in the United States," HPM 350, UNC-Chapel Hill, NC.
- 2019 November 2019. "A Primer on the Health Workforce in the United States," HPM 754, UNC-Chapel Hill, NC.
- 2019 November 2019. "NC's Health Workforce and Medicaid Transformation," NRSA Seminar, UNC-Chapel Hill, NC.
- 2019 October 2019. "Rural Health Workforce in NC & New Models of Care," Jim Bernstein Health Leadership Fellows Program. Chapel Hill, NC.
- 2019 September 2019. "Health Research Ideas," for MSPH students attending HPM 789: the Masters Paper Development Course. McGavran-Greenburg PH-1305, UNC-Chapel Hill.
- 2019 April 2019. "Health Workforce Trends and Challenges in North Carolina and the United States," Didactics - Kenan Scholars, Bondurant Hall, UNC-Chapel Hill.

- 2019 April 2019. "Workforce Planning in a Rapidly Changing Healthcare System" HPM 352, Introduction to the Health Services System. McGavran-Greenburg 2308, UNC-Chapel Hill.
- 2019 January 2019. "PhD Graduate to Researcher and Beyond," Hillman Seminars, UNC-Chapel Hill.
- 2019 January 2019. "Health Workforce Trends and Challenges in North Carolina and the United States", FMC 284; PGY2 Family Medicine Residents, Second Session, School of Medicine, UNC-Chapel Hill
- 2019 January 2019. "Developing physician models that don't simply answer the question "how many doctors do we need?" HPM 873, Professional Development Seminar. PhD students, UNC-Chapel Hill
- 2018 December 2018. Health Workforce Trends and Challenges in North Carolina and the United States", Family Medicine Residents, School of Medicine, UNC-Chapel Hill
- 2018 November 2018. "The Nursing Workforce in North Carolina: Who Cares and Why Do They Care?" Hillman Scholars, School of Nursing, UNC-Chapel Hill. PhD nursing students
- 2018 November 2018. "Tips and Tricks for Data Analysis" Future of Nursing Scholars Program. Robert Wood Johnson. 49 nursing PhD students.
- 2018 October 2018. "A Primer on the Health Workforce in the United States". HPM 754, Health Policy and Management, School of Public Health, UNC-Chapel Hill. 58 nursing/medical /graduate students
- 2018 October 2018. "Putting It All Together (the 10th anniversary edition)". HPM 874. Professional Development Seminar. 15 PhD students, UNC-Chapel Hill
- 2018 September 2018. "The Art of Robust and Sexy Policy Analyses". HPM 789. Policy analysis models and methods. Master's Paper Prep Class, 20 students. Department of Health Policy and Management, Gillings School of Global Public Health, UNC-Chapel Hill
- 2018 April 2018. "Health Workforce Trends and Challenges in North Carolina and the United States" Rural Kenan Scholars, MacNider Hall, UNC Chapel Hill. ~10 medical students.
- 2018 February 2018. "Workforce Planning for a Rapidly Changing Healthcare System" HPM 352, Introduction to the Health Services System, School of Medicine, UNC-Chapel Hill. 45 undergraduates in Health Policy and Management, School of Public Health, UNC-Chapel Hill
- 2018 February 2018. "Workforce Planning for a Rapidly Changing Healthcare System" Dept. of Family Medicine, UNC-Chapel Hill. 7 Preventive Medicine Residents.
- 2018 January. Health Workforce Trends and Challenges in North Carolina and the United States", Family Medicine Residents, School of Medicine, UNC-Chapel Hill. 7 residents.
- 2017 December 2017. "Health Workforce Trends and Challenges in North Carolina and the United States". Family Medicine Residents 2, Workforce Needs, School of Medicine, UNC-Chapel Hill. 9 residents.2017
- 2017 November 2017 "Tips and Tricks for Data Analysis" Future of Nursing Scholars Program. Robert Wood Johnson. 49 nursing PhD students.
- 2017 October 2017. "A Primer on the Health Workforce". Health Care in the United States: Structure and Policy (HPM 754), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 58 graduate students.

- 2017 September 2017. "The Art of Robust and Sexy Policy Analyses." Master's Paper Development Seminar (HPM 789), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 23 graduate students.
- 2017 April 2017. "Health Workforce Trends and Challenges in North Carolina and the United States." Kenan Scholars, School of Medicine, UNC-Chapel Hill. 10 medical students.
- 2017 March 2017. "Putting It All Together after Comps: My (n=1) Journey." Professional Development Seminar (HPM 874), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 25 graduate students.
- 2017 February 2017. "Workforce Planning in a Rapidly Changing Healthcare System." Introduction to the Health Services Systems (HPM 352), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 45 undergraduate students.
- 2017 January 2017. "Health Workforce Trends and Challenges in North Carolina and the United States." School of Medicine, UNC-Chapel Hill. 6 Family Medicine residents.
- 2016 November 2016. "Tips and Tricks for Data Analysis" Future of Nursing Scholars Program. Robert Wood Johnson. 42 graduate students.
- 2016 November 2016. "10 things you should know about the health workforce before and after the election." Hillman Scholars, School of Nursing, UNC-Chapel Hill. 20 graduate students.
- 2016 October 2016. "10 things you should know about the health workforce before and after the election." AHRQ/NRSA Training Program in Health Services Research, Cecil G. Sheps Center for Health Services Research. 10 pre- and post-doctoral trainees and 3 faculty.
- 2016 October 2016. "A Primer on the Health Workforce in the United States." Health Care in the United States: Structure and Policy (HPM 754), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 64 students.
- 2016 September 2016. "The Art of Robust and Sexy Policy Analyses." Master's Paper Development Seminar (HPM 789), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 21 graduate students.
- 2016 July 2016. "Health Services Research, Policy and Out-of-the Box Thinking: My Life as a Health Workforce Researcher." Hillman Scholars Series, School of Nursing, UNC-Chapel Hill. 50 graduate students and 10 faculty from UNC-CH, University of Pennsylvania and University of Michigan.
- 2016 April 2016. "Health Workforce Challenges in NC: Implications for Policy." Primary Care and Population Health Scholars Speaker Series, Dept. of Family Medicine, School of Medicine, UNC-Chapel Hill. 20 medical students.
- 2016 April 2016. "Health Workforce Trends and Challenges in North Carolina and the United States." Kenan Scholars, School of Medicine, UNC-Chapel Hill. 7 medical students.
- 2016 March 2016. "Rural Health Workforce Supply in North Carolina: Future Trends, Opportunities and Challenges." Presentation to Jim Bernstein Health Leadership Fellows Program. Chapel Hill. 8 fellows.
- 2016 January 2016. "Workforce Planning in a Rapidly Changing Healthcare System" Introduction to the Health Services Systems (HPM 352), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 45 undergraduate students.

- 2016 January 2016. "Health Workforce Trends & Challenges in NC and the United States" Y2 – Family Medicine Residents, School of Medicine, UNC-Chapel Hill. 6 residents.
- 2015 November 2015. "Addressing Physician Workforce Challenges in NC: How Do We Get Doctors (and other professionals) to Go Where We Need Them?" Y2 – Family Medicine Residents, School of Medicine, UNC-Chapel Hill. 6 residents.
- 2015 November 2015. "The Nursing Workforce: What Challenges and Opportunities Lie Ahead?" Hillman Scholars, School of Medicine, UNC-Chapel Hill. 20 Family Medicine residents.
- 2015 November 2015. "Tips and Tricks for Data Analysis" Future of Nursing Scholars Program. Robert Wood Johnson. 16 graduate students.
- 2015 October 2015. "Workforce Planning in a Rapidly Changing Healthcare System." Human Resources Management in Healthcare Organizations (HPM 720), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 15 graduate students.
- 2015 September 2015. "A Primer on the Health Workforce in the US." Health Care in the United States: Structure and Policy (HPM 754), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 60 graduate students.
- 2015 May 2015. "Health Workforce Challenges in North Carolina: Using Data to Inform Policy." Primary Care Public Health Scholars Speaker Series, Dept. of Family Medicine, School of Medicine, UNC-Chapel Hill. 15 graduate students.
- 2015 April 2015. "Physician Workforce Challenges in North Carolina and the United States." Kenan Primary Care Medical Scholars, School of Medicine, UNC-Chapel Hill. 7 medical students.
- 2015 February 2015. "Nursing Workforce Issues in North Carolina". Hillman Scholars, School of Nursing, UNC-Chapel Hill. 20 medical students.
- 2014-15 December 2014 and January 2015. "Physicians Workforce Challenges in North Carolina and the United States." Y2 – Family Medicine Residents, School of Medicine, UNC-Chapel Hill. 6 residents.
- 2014 October 2014. "Workforce Planning in a Rapidly Changing Health Care System." Human Resources Management in Healthcare Organizations (HPM 720), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 43 graduate students.
- 2014 September 2014. "Transforming the Health Workforce to Meet the Needs of a Transformed Health System." AHRQ/NRSA Training Program in Health Services Research, Cecil G. Sheps Center for Health Services Research. 10 pre- and post-doctoral trainees and 3 faculty.
- 2014 March 2014. "Rural Health Workforce Supply in North Carolina: Future Opportunities and Challenges." Sarah Graham Kenan Rural and Underserved Medical Scholars Program, School of Medicine, UNC-Chapel Hill. 8 medical students.
- 2014 February 2014. "How to Talk with Policymakers about Research Findings." Hillman Scholars, School of Nursing, UNC-Chapel Hill. 20 medical students.
- 2014 January 2014. "Health Workforce Trends and Challenges in Rural (and other) Areas". Bernstein Fellows Rural Leadership Session. 8 Fellows.
- 2013-14 November 2013-14. "Health Workforce Policy in the New World of Health Reform." Health Care in the United States: Structure and Policy (HPM 754), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 77 graduate students.

- 2011-14 April 2011-14. "Putting it All Together: The Presentation Formerly Known as Dissertation Trajectories." Professional Development Seminar (HPM 874), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 23 graduate students.
- 2010-14 September 2010-14. "The Art of Robust and Sexy Policy Analysis." Master's Paper Development Seminar (HPM 789), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 21 graduate students.
- 2013 September 2013. "How to Talk with Policymakers about Research Findings". AHRQ/NRSA Training Program in Health Services Research, Cecil G. Sheps Center for Health Services Research. 10 pre- and post-doctoral trainees and 3 faculty.
- 2012 November 2012. "Health Workforce Planning in the New World of Health Reform". Faculty Development Fellows, Dept. of Family Medicine, UNC-Chapel Hill. 15 Fellows.
- 2012 November 2012. "Health Workforce Policy" Health Care in the United States: Structure and Policy (HPM 754), Dept. of Health Policy and Management, School of Public Health, UNC-Chapel Hill. 63 graduate students.
- 2012 March 2012. "Medicare Advisory Board and the Effect of Physician Payment Policy on Workforce." Holderness Distinguished Medical Scholars Seminar Series, UNC-Chapel Hill. 20 medical students.
- 2011 October 2011. "Nursing Health Workforce Planning in the New World of Health Reform." School of Nursing Healthcare Quality and Patient Outcomes Seminar, UNC-Chapel Hill. 40 graduate students and faculty.
- 2011 March 2011. "Health Workforce Planning in the New World of Health Reform." UNC Program in the Humanities. 125 Fellows.

Grand Rounds

Fraher E, Spero J, Galloway G, Thomas S, Wilson H. Developing the Patient-Centered Workforce Needed for our Rapidly Changing Health Care System. Grand Rounds to the Duke Department of Community and Family Medicine. October 8, 2019.

Fraher E. "Surgical Workforce Planning in the UK and US." Grand Rounds to the UNC Department of Surgery. Chapel Hill, NC. November 3, 2010.

Dissertation and Masters Paper Committees

Student	Dissertation/Masters Paper/Senior Thesis	Degree, School	Completion Dates
Jeremy Walker	Scoping review of capitation: what are the incentives to shift primary care to value?	MSHP, Health Policy and Management, School of Public Health	August 2020-present
Gary Henderson	Increasing the number of practical nursing graduates produced by North Carolina community colleges	DrPH, School of Public Health	2020-present
Vicki Quintana	The Changing Roles and Employment Settings of LPNs in NC	MSPH, School of Public Health	2019-2020

Ryan Kandrack	Promise and performance of primary care vertical integration: Effects on cost, utilization, and quality of care for Medicare beneficiaries”	PhD, Health Policy and Management, School of Public Health	August 2017-present
Kelly Walker	Trends in Providers Doing Obstetric Care in North Carolina	MSPH, School of Public Health	2018-2019
Hannah Crook	The Migration of Nurses from Education Program to First Practice Location	BPSH, HPM, School of Public Health	2018-2019
Allie Tran	Registered Nurse Transitions in and out of the Critical Care Workforce	PhD, School of Nursing	2018-2020
Ara Millette	Registered Nurse Workforce Planning for The Miriam Hospital	DNP, School of Nursing, Duke University	2015-2019
Meriel Mccollum	Hospital Disaster Response and the Nursing Workforce	PhD, School of Nursing	2017-2020
Lucie Michel	Into the Black Box of a Nursing Burden: A Comparative Analysis of Administrative Tasks in French and American Hospitals	PhD, Pierre and Marie Curie University, Paris, France	2015-2017
Soobin Seong	Certified Medical Assistants (CMA): The Key to a More Efficient Healthcare System?	MSPH, HPM, School of Public Health	2015-2017
Emily G. Gamble	Community Paramedicine Models, Outcomes, and Barriers in a Rural Setting	MSPH, HPM, School of Public Health	2015-2017
Yin Li	The Contributions of the Nurse Practitioner Workforce to Primary Care	PhD, School of Nursing	2012-2017
Eduardo Benjamin Puertas	Factors That Influence a Career Choice in Primary Care: A Mixed-Methods Study Among Medical Students Starting the Social Service Program in Honduras	DrPH, School of Public Health	2013-2015

Students Supervised/Mentored (2010-Present)

Semester/ Year	Student	Project	Department*/ Degree
July 2019-present	Jacqueline Nikpour	The Supply and Demand of Nurses in North Carolina	Duke SON PhD
July 2018-July 2019	Esita Patel	The Supply and Demand of Registered Nurses in North Carolina	SON/PhD
August 2017- spring 2018	Victoria Petermann	Understanding nurses expanded roles in New Zealand and the United States	SON/PhD

Semester/ Year	Student	Project	Department*/ Degree
May 2017-spring 2018	Allison Cummings	Developing a Better Understanding of Medical Assistants' Roles and Functions in Primary Care Settings	SOM/MD
Fall 2015-Spring 2017	Emily Tierney	Developing education tools and curriculum for physician projection model	HPM/MHA
Spring 2015-Spring 2016	Rachel Hirshey & Megan Winkler	How well has the diversity of the NC nursing workforce kept pace with changing population demographics?	Duke SON/PhD
Fall 2015-Spring 2016	Anne Cotter	Tracking the workforce outcomes of MD/MPH graduates	SOM/MD
Fall 2015-Spring 2016	Kathryn Lavoie	2014 NC Health Professions Data Book, and location of medical education of physicians practicing in North Carolina	HPM/MHA
Spring 2014-Spring 2016	Rachel Machta	Studying new and emerging health workforce roles as part of Health Workforce Research Center	HPM/PhD
Summer 2015	Marianne Meyers	Supply and Distribution of Mental Health Providers in North Carolina	Santa Clara University/BSPH
Fall 2014-Spring 2015	Saraí Narváez	Analysis for General Assembly on need for new optometry school in North Carolina	HPM/MSPH
Fall 2014-Spring 2015	Blair Golden	Tracking outcomes of UNC-CH medical students	SOM/MD
Fall 2011-December 2014	Marisa Morrison	Open Source Web-based Physician Projection Model	HPM/PhD
Fall 2013	Karen Wade	Literature reviews for the American Board of Medical Specialties' Evidence-Base Library	HPM/MSPH
Fall 2013	Chris DelGrosso	A Study of the Pharmacist Workforce in North Carolina	HPM/MHA
Summer 2013	Logan Corey	GME in the United States: A Review of State Initiatives	SOM/MD
Spring 2011	Yin Li	How Many Nurse Practitioners in Primary Care? There are significant differences depending on how you count them	SON/PhD
Fall 2012	Shrey Banga	Open Source Web-based Physician Projection Model	Computer Science/MSc
Fall 2012	Kevin Fox	Mapping project for American Medical Association	Geography/PhD
Fall 2011-Dec 2012	Caroleen Quach	Assessing the Workforce Needs of Patient Centered Medical Homes in North Carolina	HPM/MSPH
Summers 2011 & 2012	Helen Newton	Trends in Undergraduate and Graduation Medical Education in North Carolina	Bowdoin College/BA
Fall 2011-Summer 2012	Eddie Alcorn	Allied Health Workforce Tracking Report	HPM/MSPH
Fall 2010-Summer 2012	Simon Neuwahl	Surgical workforce analysis	HPM/MSPH
Fall 2010-Summer 2011	Meredith Kimball	Allied Health Workforce Tracking Report	HPM/MSPH

* HPM = Health Policy & Management, SOM = School of Medicine, SON = School of Nursing

GRANTS

Active

- 2020-2020 Principal Investigator. 101,479. (8%). Examining the Supply and Demand of Nurses in North Carolina (supplement). July 1, 2020 to June 30, 2021. North Carolina Board of Nursing.
- 2019-2022 Principal Investigator. \$427,383. (15%). Estimating the Future Supply of Pediatric Subspecialists in the United States and Regions of the US from 2018-2040. November 1, 2019-October 31, 2022. The American Board of Pediatrics.
- 2019 – 2021 Principal Investigator. \$255,000. (15%). Producing the Evidence Needed for Hospitals to Successfully Navigate the Shift to Value. January 1, 2019 – December 21st 2021. The Duke Endowment.
- 2018-2021 Co-Principal Investigator (Cristen Page PI). \$2,400,000. (10%). Rural Residency Technical Assistance and Development Program. September 30, 2018-September 29, 2021. Federal Office of Rural Health Policy, Bureau of Health Professions, Health Resources and Services Administration.
- 2018-2020 Principal Investigator. \$220,687.06. (13%). Examining the Supply and Demand of Nurses in North Carolina. July 1, 2018 to June 30, 2020. North Carolina Board of Nursing.
- 2013-2022 Principal Investigator. \$4,589,507. (25%) Carolina Health Workforce Research Center. September 1, 2013 - August 31, 2022. National Center for Health Workforce Analysis, Bureau of Health Professions, Health Resources and Services Administration.
- 2012-2020 Investigator (Cheryl Jones, UNC School of Nursing, PI). \$3,000,000. (5% from 2015-2018). July 1, 2012 - June 30, 2019. Hillman Scholars Program in Nursing Innovation. Rita and Alex Hillman Foundation.
- 2000-2020 Principal Investigator. (5%). ~\$152,000 per year. Annual contract with the North Carolina Area Health Education Centers (NC AHEC) Program.

Completed

- 2011-2019 Principal Investigator. \$1,251,504. (30%). July 1, 2011 - March 31, 2019. An Open Source Model for Projecting Physician Shortages in the United States. Physicians Foundation.
- 2017-2018 Principal Investigator. \$20,466. (2%). November 1, 2017 – June 30, 2018. Examining the North Carolina Physician Assistant and Chiropractor Workforce. UNC General Administration.
- 2017-2018 Principal Investigator. \$25,587. (3.5%). September 1, 2017 – June 30, 2018. Assessing the Workforce Outcomes of Graduates from North Carolina’s Medical School and Medical Residency Training Programs. UNC General Administration.
- 2017-2018 Principal Investigator. \$48,599. (3%). August 31, 2017 – June 30, 2018. Examining the Healthcare Needs in the UNC-Pembroke Region and What Potential UNC Pembroke Healthcare Programs Would Best Serve the Region. UNC Pembroke and UNC General Administration.

- 2016-2018 Principal Investigator. UNC University Research Council Award. \$7,500. (No FTE coverage allowed). May 1, 2016 – April 30, 2018. “What can we learn from New Zealand about engaging patients and clinicians in redesigning the health workforce?”
- 2016-2017 Investigator (Marisa Domino, PI). \$24,974. (3%). November 1, 2015 – February 29, 2016. Examining the Psychologist Workforce in North Carolina. University of North Carolina General Administration.
- 2012-2017 Principal Investigator. \$225,000. (10%). April 15, 2012 - January 31, 2017. The Future of Nursing: Campaign for Action Research Manager. Robert Wood Johnson Foundation.
- 2016 Principal Investigator. \$7,500. (0%, no FTE coverage allowed). January 1, 2016 – December 31, 2016. Research Proposal “What can we learn from New Zealand about engaging patients and clinicians in redesigning the health workforce?” IBM Junior Faculty Development Award, UNC Chapel Hill.
- 2016 Principal Investigator. \$35,077. (25%). April 1, 2016 – May 31, 2016. Examine the Current and Future Supply, Demand and Distribution of Physicians in North Carolina’s Greater Charlotte Region. University of North Carolina at Charlotte.
- 2015-2016 Principal Investigator. \$9,990. (4%). December 1, 2015 – May 31, 2016. Developing a physician supply model for the American Society of Nephrology. American Society of Nephrology.
- 2014 Principal Investigator. \$21,975. (5%). August 1, 2014 - December 31, 2014. Evaluation of the Pharmacy Workforce in North Carolina. UNC General Administration.
- 2014-2015 Principal Investigator. \$52,000. (2%). October 1, 2014 - September 30, 2015. Evaluation of the Workforce Needs in Pediatric Surgery. American College of Surgeons.
- 2014-2015 Principal Investigator. \$24,244. (2%). September 1, 2014 - February 28, 2015. Evaluation of the Optometry Workforce in North Carolina. North Carolina General Assembly and UNC General Administration.
- 2013-2015 Co-Principal Investigator (with Cheryl Jones, UNC School of Nursing, PI). \$274,857. (5%). February 1, 2013 - January 31, 2015. Educational Transitions and Trajectories of Registered Nurses in North Carolina. National Council of State Boards of Nursing.
- 2008-2013 Co-Principal Investigator (with Thomas C. Ricketts, Sheps Center). \$2,610,200. (15%). March 1, 2008 - June 30, 2013. American College of Surgeons Health Policy Research Institute. American College of Surgeons.
- 2013 Principal Investigator. \$19,441. (3%). August 15, 2013 - December 14, 2013. A Research Review for the ABMS Evidence Library. American Board of Medical Specialties.
- 2013 Principal Investigator. \$8,000. (5%). July 1, 2013 - November 30, 2013. Technical Assistance to States, National Governors Association.

- 2010-2012 Principal Investigator. \$144,595. (20%). October 1, 2010 - September 31, 2012. Assessing the Workforce Needs of Patient Centered Medical Homes in North Carolina. Bureau of Health Professions, Health Resources and Services Administration.
- 2009-2010 Co-Principal Investigator (with Andy Knapton, National Health Service England). \$27,000. (20%). November 1, 2009 - April 30, 2010. Migration of the Recently Trained Medical Workforce. National Health Service London.
- 2008 Principal Investigator. \$65,137. (25%). February 20, 2008 - October 30, 2008. A Study of Associate Degree Nursing Program Success. North Carolina Community College System.
- 2007-2008 Principal Investigator. \$32,105. (15%). November 2007 - July 2008. Analysis of Health Workforce Needs of North Carolina Hospitals. North Carolina Hospital Association.
- 2007 Lead Investigator (Rebecca Slifkin, PI). \$30,000. (10%). Retention of Female Physicians in U.S. Rural Counties, 1991-2003. Federal Office of Rural Health Policy, Health Resources and Services Administration.
- 2007 Principal Investigator. \$36,976. (10%). Allied Health Workforce Assessment Project. Duke Endowment.
- 2006 Principal Investigator. \$41,000. (10%). Allied Health Workforce Assessment Project. Duke Endowment.
- 2005 Principal Investigator. \$10,000. (7%). Supply and Distribution of Mental Health Providers in North Carolina. North Carolina Area Health Education Centers Program.
- 2001-2005 Principal Investigator. \$184,500. (10%). Allied Health Workforce Assessment Project. Duke Endowment.
- 2002-2003 Lead Investigator (Rebecca Slifkin, PI). \$78,808. (7%). The Effect of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 on the Financial Viability of Rural Pharmacies. Federal Office of Rural Health Policy, Health Resources and Services Administration.
- 2001-2002 Principal Investigator. \$20,000. (10%). The North Carolina Pharmacist Workforce Project. North Carolina Area Health Education Centers Program.
- 2001-2002 Co-Investigator (Thomas Ricketts, Health Policy and Management, PI). \$239,467. (15%). Evaluation of the National AHEC Program. Bureau of Health Professions, Health Resources and Services Administration.

PROFESSIONAL SERVICE

To Discipline

- 2019-present Member, Expert Advisory Board on Children's Hospital GME
- 2019-present Chair, Council on Graduate Medical Education (COGME), body which is charged with advising the Secretary of the U.S. Department of Health and Human Services and Congress on physician workforce trends, training issues and financing

2019-present Member, North Carolina Institute of Medicine

2018-present Editorial board, Human Resources for Health

2017-present Co-leader for Health Workforce Theme at 2018 and 2019 AcademyHealth Annual Research meetings

2011-present Reviewer, New England Journal of Medicine, Journal of the American Medical Association, Health Affairs, Journal of the American Board of Family Practice, Surgery, Academic Medicine, Annals of Surgery, American Journal of Managed Care, American Journal of Preventive Medicine, Human Resources for Health

2010-present Member, U.S. Planning Committee, International Health Workforce Collaborative

2016-2020 Member, Council on Graduate Medical Education (COGME), US DHHS

2011-2017 Member, North Carolina Board of Nursing Research Committee

2009-2017 Member, Association of American Medical Colleges (AAMC) Workforce Conference Planning Committee

2016 Co-chair, National Academy of Medicine Health Planning Committee for Future Financing of Health Professional Education: A Workshop

2016 Invited expert, Macy Foundation Annual Conference, Preparing Registered Nurses for Enhanced Roles in Primary Care

2016 Member, American Hospital Association, Committee on Performance Improvement

2014-2015 Member, National Governors Association Expert Faculty on Health Workforce

2014-2015 Member, Committee on the Future of Community College Nursing Education, North Carolina Community College System

2010, 2012, 2014-2017 Member, Abstract review committee for AcademyHealth Annual Research Meetings

2008-2012 Member, Executive Committee, Council for Allied Health in North Carolina

2011 Member, Health Resources and Services Administration expert panel to develop National Health Workforce Minimum Dataset

2011 Chair, AcademyHealth Health Workforce Interest Group (HWIG)

2011 Member, National Academy of Sciences, Institute of Medicine Planning Group for Workshop on Allied Health Workforce and Services

2010-2011 Member, Steering Committee of NC Institute of Medicine's Health Reform Workgroup

2009-10 Member, U.K. Planning Committee for International Health Workforce Collaborative

Within UNC-Chapel Hill

2018 Member, University of North Carolina School of Medicine Strategic Planning sub-committee on global initiatives

2017 Member, Chancellor's Carolina Health Task Force

2012 Member, University of North Carolina School of Medicine Strategic Planning Committee (E4)