

NIH Biographical Sketch Common Form

Name: Nadel, Helen Ruth

Persistent Identifier (PID) of the Senior/Key Person: <https://orcid.org/0000-0003-0236-7298>

Position Title: Clinical Professor of Radiology, Head Division of Pediatric Nuclear Medicine

Organization and Location: Lucile Packard Children's Hospital at Stanford, Palo Alto, California, United States

PROFESSIONAL PREPARATION

INSTITUTION AND LOCATION	DEGREE	Start Date	Completion Date	FIELD OF STUDY
University of British Columbia, Department of Radiology, Division of Nuclear Medicine, Vancouver, British Columbia, Canada	Resident	01/1989	12/1989	Nuclear Medicine
Hospital for Sick Children and University of Toronto, Toronto, Ontario, Canada	Fellow	07/1982	06/1983	Pediatric Radiology Fellowship
University of Toronto, Department of Radiology, Toronto, Ontario, Canada	Resident	07/1978	06/1982	Diagnostic Radiology
University of Toronto, Toronto, Ontario, Canada	Resident	06/1977	06/1978	Rotating Internship
University of Manitoba Medical School, Winnipeg, Manitoba, Canada	Doctor of Medicine (MD)	09/1973	05/1977	Medicine

Appointments and Positions

2018 - present	Clinical Professor of Radiology, Head Division of Pediatric Nuclear Medicine, Lucile Packard Children's Hospital at Stanford, Palo Alto, California, United States
2018 - present	Clinical Professor of Radiology, Head Division of Pediatric Nuclear Medicine, Lucile Packard Children's Hospital at Stanford, Palo Alto, California, United States
1998 - 2018	Associate Professor, Department of Radiology, Faculty of Medicine, University of British Columbia, , Vancouver, British Columbia, Canada
1990 - 1998	Assistant Professor, Department of Radiology, Faculty of Medicine, University of British Columbia, , Vancouver, British Columbia, Canada
1986 - 1990	Clinical Assistant Professor, Department of Radiology, Faculty of Medicine, University of British Columbia, , Vancouver, British Columbia, Canada
1983 - 2018	Head, Division of Nuclear Medicine, British Columbia Children's Hospital, Vancouver, British Columbia, Canada
1983 - 1986	Clinical Instructor, Department of Radiology, Faculty of Medicine, University of British Columbia, , Vancouver, British Columbia, Canada

Products

Products Closely Related to the Proposed Project

- Gatidis S, Ponisio MR, Borgwardt L, Cain TM, Francis P, Hamdi M, Johnson G, Kurch L, Laforest R, Lim R, McConathy J, Mody T, Nevo E, Pandit-Taskar N, Qi J, States LJ, Zucchetto P, Nadel HR. Pediatric PET/MRI: Imaging Techniques, Indications, and Clinical Implementation. *Radiographics*. 2025 Nov;45(11):e240105. PubMed PMID: [41100355](#).
- Treves ST, Fahey FH, Ferrer Valencia V, Burchell N, Burton C, Czachowski M, Grant FD, Lai H, Lim R, Nadel H, Pampaloni MH, Pandit-Taskar N, Parisi M, Seghers V, Shah S, Shulkin B, States L, Vali R, Yoo D, Zukotynski K. 2024 Update of the North American Consensus Guidelines for Pediatric Administered Radiopharmaceutical Activities. *J Nucl Med Technol*. 2025 Sep 5;53(3):193-197. PubMed PMID: [40664486](#).
- Al-Ibraheem A, Scott AM, Abdulkadir AS, Vrachimis A, Lamoureux F, Trujillo PB, Bailey DL, More S, Giammarile F, Kumar R, Nonnekens J, Cutler CS, Urbain JC, Dibble EH, Sathekge MM, Bomanji J, Cerci JJ, Thomas E, Small W, Louw L, O JH, Lee ST, Nadel H, Jacene H, Watabe T, Bom HH, Bouyoucef SE, Weston C, Wadsley J, Irwin AG, Croasdale J, Zanzonico P,

Paez D, Ghesani M. Consensus Nomenclature for Radionuclide Therapy: Initial Recommendations from Nuclear Medicine Global Initiative. J Nucl Med. 2025 May 1;66(5):757-763. PubMed PMID: [40147850](#).

4. Cederberg KB, Iyer RS, Chaturvedi A, McCarville MB, McDaniel JD, Sandberg JK, Shamma A, Sharp SE, Nadel HR. Imaging of pediatric bone tumors: A COG Diagnostic Imaging Committee/SPR Oncology Committee White Paper. Pediatr Blood Cancer. 2023 Jun;70 Suppl 4(Suppl 4):e30000. PubMed Central PMCID: [PMC10661611](#).

Other Significant Products Highlighting Contributions to Science

1. Etchebehere E, Andrade R, Camacho M, Lima M, Brink A, Cerci J, Nadel H, Bal C, Rangarajan V, Pfluger T, Kagna O, Alonso O, Begum FK, Mir KB, Magboo VP, Menezes LJ, Paez D, Pascual TN. Validation of Convolutional Neural Networks for Fast Determination of Whole-Body Metabolic Tumor Burden in Pediatric Lymphoma. J Nucl Med Technol. 2022 Sep;50(3):256-262. PubMed PMID: [35440476](#).
2. Khalaf AM, Nadel HR, Dahmouh HM. Simultaneously Acquired MRI Arterial Spin-Labeling and Interictal FDG-PET Improves Diagnosis of Pediatric Temporal Lobe Epilepsy. AJNR Am J Neuroradiol. 2022 Mar;43(3):468-473. PubMed Central PMCID: [PMC8910808](#).
3. McCarten KM, Nadel HR, Shulkin BL, Cho SY. Imaging for diagnosis, staging and response assessment of Hodgkin lymphoma and non-Hodgkin lymphoma. Pediatr Radiol. 2019 Oct;49(11):1545-1564. PubMed PMID: [31620854](#).
4. Wise-Faberowski L, Irvin M, Lennig M, Long J, Nadel HR, Bauser-Heaton H, Asija R, Hanley FL, McElhinney DB. Assessment of the Reconstructed Pulmonary Circulation With Lung Perfusion Scintigraphy After Unifocalization and Repair of Tetralogy of Fallot With Major Aortopulmonary Collaterals. World J Pediatr Congenit Heart Surg. 2019 May;10(3):313-320. PubMed PMID: [31084304](#).

Certification:

I certify that the information provided is current, accurate, and complete. This includes but is not limited to information related to domestic and foreign appointments and positions.

I also certify that, at the time of submission, I am not a party to a malign foreign talent recruitment program.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

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NIH BIOGRAPHICAL SKETCH SUPPLEMENT

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Personal Statement

I am delighted to collaborate with Dr. Zhao on this NIBIB Trailblazer R21 project to advance physiological imaging using PET/MRI. My expertise in pediatric nuclear medicine and molecular imaging directly complements Dr. Zhao's innovations in AI and physiological modeling. I am committed to providing clinical guidance, participating in monthly project meetings, and assisting with the interpretation of PET/MRI data to ensure clinical relevance. I will review all manuscripts and presentations resulting from this collaboration. I look forward to supporting this interdisciplinary team in establishing a novel imaging paradigm across the lifespan. My clinical and academic work focuses on translating advanced pediatric hybrid imaging into reproducible, child-centered care pathways, with particular emphasis on PET/CT and PET/MRI in oncology and complex disease. I have led pediatric nuclear medicine programs and contributed to protocol optimization, quality and safety (including pediatric-specific dose and workflow considerations), and multicenter guideline efforts that support standardized imaging for clinical decision-making and trials. At Stanford/Lucile Packard Children's Hospital, I have helped advance clinical implementation and governance of PET/MRI, and my scholarly work includes educational and peer-reviewed contributions in pediatric PET/MRI and hybrid imaging. I also pursue AI-enabled imaging approaches that address clinically relevant needs in pediatric oncology—such as quantitative assessment of disease burden and treatment response—supporting more objective, scalable interpretation in real-world practice.

Honors

2026	Peter Valk, MD Lectureship Award, Society of Nuclear Medicine and Molecular Imaging
2026	John Kirkpatrick Lectureship, Boston Children's Hospital
2024	Keynote Lecture on Pediatric Nuclear Medicine, Israeli Society of Nuclear Medicine Annual Meeting
2024	Robert H. Wilkinson Radiology Grand Rounds Annual Lecture, Duke University
2023	Certificate of Merit, RSNA Educational Exhibit (Pediatric PET/MRI), Radiological Society of North America
2021	Fellow of the Society of Nuclear Medicine and Molecular Imaging, Society of Nuclear Medicine and Molecular Imaging
2016	First Place, Educational Exhibits Contest (co-recipient), Canadian Association of Radiologists Annual Meeting.
2016	Massoud Majd Visiting Lectureship, Children's National Health System, Washington, DC
2014	Mickey (Cardiff) Williams Distinguished Service Award, Western Regional Society of Nuclear Medicine
2008	IPC Murray Memorial Lecture ("SPECT-CT Imaging in Children"), Prince of Wales Hospital and University of Sydney, Sydney Australia
1985	Selected as one of the "Most Significant" 14 chest-disease articles published in 1985 (Radiographics 5:813, 1985); selected for Yearbook of Diagnostic Radiology. Nadel HR, Stringer DA, Levison H, Turner JEP, Sturgess JM. Radiology of the Immobile Cilia Syndrome. Radiology. 1985;154:651-655., Radiological Society of North America
2023 - 2024	President, Society of Nuclear Medicine and Molecular Imaging (SNMMI).
2001 - 2001	Wyeth Excellence in Teaching Award, (co-recipient), University of British Columbia Department of Pediatrics
1999 - 2000	Radiology Residency Award for Excellence in Teaching,(co-recipient), University of British Columbia Department of Radiology
1993 - 1994	1993-1994. Teaching Excellence Award, University of British Columbia Nuclear Medicine Residency Training Program

Contributions to Science

1. Establishing Pediatric Hybrid Imaging as a Clinical Standard Historical background. Early hybrid imaging technologies (PET/CT and later PET/MRI) were developed largely for adult oncology, with limited pediatric-specific evidence, protocols, or

workflow models. Children present unique challenges related to radiation exposure, sedation, disease biology, and longitudinal imaging needs. Central findings. Through sustained clinical leadership and scholarship, I helped define pediatric-appropriate indications, protocols, and implementation strategies for hybrid imaging, demonstrating how combined functional and anatomic imaging improves staging, response assessment, and care coordination in children. Influence on science/health. This work supported broader adoption of pediatric PET/CT and PET/MRI, informed international practice standards, and helped shift hybrid imaging from experimental use to routine pediatric oncology care. Role. I led pediatric nuclear medicine programs, authored and co-authored foundational reviews and guidelines, and contributed to international consensus efforts on pediatric hybrid imaging. Representative products: Nadel, *Pediatr Radiol* 2011; Nadel, *EJNMMI* 2014; Meyer & Nadel, *Pediatr Blood Cancer* 2008; Vali et al., *J Nucl Med* 2021; Gatidis et al., *Radiographics* 2025

2. Advancing Pediatric PET/MRI from Concept to Clinical Practice Historical background. PET/MRI offered theoretical advantages over PET/CT for children, including radiation reduction and superior soft-tissue contrast, but early adoption was limited by technical complexity and lack of pediatric experience. Central findings. My work demonstrated practical, pediatric-specific PET/MRI workflows and clinical indications, clarifying where PET/MRI adds value over existing modalities and how it can be integrated safely into routine care. Influence on science/health. These contributions accelerated clinical adoption of PET/MRI in pediatric centers, informed educational curricula, and provided an evidence-based framework for hybrid PET/MR programs internationally. Role. I contributed to early international PET/MRI workshops, led educational initiatives, served on institutional PET/MR governance committees, and authored high-impact educational and review publications. Representative products: *Mol Imaging Biol* 2014 PET/MR Workshop Report; ACR–SNMMI PET/MR Credentialing Statement 2017; Sanli et al., *Clin Nucl Med* 2018
3. Standardizing Imaging in Pediatric Oncology through Cooperative Groups Historical background. As pediatric oncology trials expanded across national and international consortia, variability in imaging acquisition and interpretation limited consistent staging and response assessment, particularly in sarcoma trials. Central findings. Through work aligned with the Children’s Oncology Group and international collaborators, I helped integrate standardized imaging approaches into landmark randomized trials. Imaging became an explicit, harmonized component of trial design for staging, response assessment, and surveillance. Influence on science/health. Embedding imaging standards strengthened outcome analyses, improved comparability across institutions, and influenced long-term standards of care, as cooperative-group protocols routinely inform clinical practice. Role. I served as an imaging guideline author and subject-matter expert, contributing pediatric nuclear medicine and hybrid imaging expertise to ensure trial imaging requirements were reproducible, clinically meaningful, and aligned with pediatric safety principles. Representative products: Meyers et al., *Journal of Clinical Oncology*, 2005; Meyers et al., *Journal of Clinical Oncology*, 2008; Meyer and Nadel, *Pediatric Blood & Cancer*, 2009; Bielack et al., *Journal of Clinical Oncology*, 2015; Cederberg 2022 and Mhlanga 2023, COG-aligned imaging studies.
4. Quantitative and AI-Enabled Imaging in Pediatric Oncology Historical background. Pediatric oncology imaging has traditionally relied on qualitative interpretation, limiting reproducibility and scalability of response assessment across readers and institutions. Central findings. I contributed to validation of automated, AI-based approaches for rapid determination of whole-body metabolic tumor burden in pediatric lymphoma, demonstrating feasibility and clinical relevance in children. Influence on science/health. This work supports a transition toward objective, quantitative imaging biomarkers in pediatric oncology, enabling more consistent response assessment and laying groundwork for AI-assisted clinical workflows. Role. I provided clinical expertise for study design, validation, and interpretation, ensuring AI methods addressed real pediatric imaging challenges and were clinically meaningful. Representative products: Etchebehere et al., *Journal of Nuclear Medicine Technology*, 2022.
5. Leadership in Pediatric Imaging Safety and Professional Standards Historical background. Rapid growth in advanced imaging raised concerns about radiation exposure, credentialing, and quality assurance, particularly in pediatric populations. Central findings. Through leadership roles and scholarly contributions, I advanced pediatric-specific approaches to radiation justification, optimization, and professional standards in nuclear medicine and hybrid imaging. Influence on science/health. This work contributed to national and international standards that improved imaging safety, workforce training, and consistency of pediatric imaging practice. Role. I served in senior leadership roles within professional societies, including SNMMI President, IAC board membership for CT and Nuclear Medicine- PET and authored position-defining commentaries and standards that shaped pediatric imaging practice. Representative products: Nadel, *Journal of Nuclear Medicine*, 2023; SNMMI/ACR standards and position documents.

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