

**NATHAN LEWIS FROGGE, M.D., M.B.A.**  
500 N Wall St., Kankakee, IL 60901  
nfrogge@rhc.net

**EDUCATION**

<b>WASHINGTON UNIVERSITY IN ST. LOUIS</b> Interventional & Structural Cardiology Fellowship	2020 - 2022
<b>WASHINGTON UNIVERSITY IN ST. LOUIS</b> Cardiology Fellowship	2017 - 2020
<b>UNIVERSITY OF CHICAGO MEDICINE</b> Internal Medicine Residency	2014 - 2017
<b>RUSH UNIVERSITY</b> Doctor of Medicine	2010 - 2014
<b>WASHINGTON UNIVERSITY IN ST. LOUIS</b> Master of Business Administration Concentration in Healthcare Management and Finance	2008 - 2010
<b>WASHINGTON UNIVERSITY IN ST. LOUIS</b> Bachelor of Arts, Environmental Studies	2005 - 2009

**LICENSURE & CERTIFICATIONS**

Board Certified, Interventional Cardiology American Board of Internal Medicine	2021 - Present
Board Certified, Cardiovascular Disease American Board of Internal Medicine	2020 - Present
Board Certified, Echocardiography National Board of Echocardiography	2019 - Present
Board Certified, Internal Medicine American Board of Internal Medicine	2017 - Present
Permanent Medical License, Illinois Illinois Department of Financial and Professional Regulation	2022 - Present
Permanent Medical License, Missouri Missouri Board of Registration for the Healing Arts	2017 - Present

**HONORS & AWARDS**

**GRADUATE**

Alpha Omega Alpha Honor Society Rush Medical College • One of top 16% of class recognized for leadership, academic excellence, and service	2014
James B. Herrick Award for Internal Medicine Rush Medical College • Voted by faculty as the most outstanding student in Internal Medicine among a class of 150	2014
Muehrcke Family Award for Nephrology Rush Medical College • Awarded by faculty for demonstrating outstanding achievement in Nephrology	2014
Young Investigator's Award - Runner-Up American Society of Nuclear Cardiology (ASNC) • Selected among 7 finalists under age 35 from a field of over 1,000 submitted studies	2012

Dean's Research Fellowship Rush Medical College • One of 30 proposals awarded an 8-week research stipend among 150 medical students	2011
ICE Case Competition - 3 <sup>rd</sup> Place Washington University in St. Louis – Olin Business School • Top finalist in a 3-day case competition of 35 teams of 4 MBA students	2010

## UNDERGRADUATE

Thomas H Eliot Academic Scholarship Washington University in St. Louis	2005 - 2009
Dean's List Washington University in St. Louis	2008
All-American, First Team, Division II/III/NAIA Football North American Intrafraternity Council	2008
All-Conference (UAA), First Team NCAA Football, Division III	2007 & 2008
Buchanan Outstanding Chapter Award, Vice President Sigma Phi Epsilon Fraternity	2009

## PUBLICATIONS

### *Original Manuscripts*

- Amin A, **Frogge N**, Kulkarni H, Rudolf G, Ewald G, Miller R, Hall B, Rogers S, Gluckman T, Curtis J, Masoudi F, Rao V. The bleeding risk treatment paradox at the physician and hospital level: Implications for reducing bleeding in patients undergoing percutaneous coronary intervention. *American Heart Journal*. 2022, Jan;243:221-231. PMID 34543645.
- Amin A, McNeely C, Sperus J, Bach R, **Frogge N**, Lindner S, Jain S, Bradley S, Wasfy J, Goyal A, Maddox T, House J, Kulkarni H, Masoudi F. Incremental Cost of Acute Kidney Injury after Percutaneous Coronary Intervention in the United States. *American Journal of Cardiology*. 2020, Jan 1;125(1):29-33. PMID 31711633.
- Amin A, Crimmins-Reda P, Miller S, Rahn B, Caruso M, Funk M, Pierce A, Kurz HI, Lasala JM, Zajarias A, Bach RG, Sintek MA, **Frogge N**, Jain S, Kulkarni H, Singh J. Reducing Acute Kidney Injury and Costs of Percutaneous Coronary Intervention by Patient-Centered, Evidence-Based Contrast Use. *Circulation: Cardiovascular Quality Outcomes*. 2019, Mar 12(3):e004961. PMID 30857411
- Amin A, Pinto D, House J, Rao S, Spertus J, Cohen M, Pancholy S, Salisbury A, Mamas M, **Frogge N**, Jasvinder Singh J, Lasala J, Masoudi F, Bradley S, Wasfy J, Maddox T, Kulkarni H. Association of Same-Day Discharge After Elective Percutaneous Coronary Intervention in the United States With Costs and Outcomes. *JAMA Cardiology*. 2018, Nov 1; 3(11):1041-1049. PMID 30267035
- Doukky R, **Frogge N**, Appis A, Hayes K, Khoudary G, Fogg L, Williams K. Impact of Appropriate Use on the Estimated Radiation Risk to Men and Women Undergoing Radionuclide Myocardial Perfusion Imaging. *Journal of Nuclear Medicine*. 2016 Aug; 57(8):1251-7. PMID 27103019
- Doukky R, Hayes K, **Frogge N**. Appropriate use criteria for SPECT myocardial perfusion imaging: Are they appropriate for women? *Journal of Nuclear Cardiology*. 2015, Nov; 22(6):1-11. PMID 26304956
- Doukky R, Hayes K, **Frogge N**, Nazir NT, Collado FM, Williams KA. Impact of Insurance Carrier, Prior Authorization, and Socioeconomic Status on Appropriate Use of SPECT Myocardial Perfusion Imaging in Private Community-Based Office Practice. *Clinical Cardiology*. 2015, May; 38(5):267-73. PMID 25955195

- Doukky R, Hayes K, **Frogge N**. Are Cardiologists Truly Better at Appropriately Selecting Patients for Stress Myocardial Perfusion Imaging? *International Journal of Cardiology*. 2014 Sep;176(1):285-6. PMID 25042647
- Doukky R, Hayes K, **Frogge N**, et al. The impact of appropriate use on the prognostic value of SPECT myocardial perfusion imaging. *Circulation*. 2013, Oct; 128(15):1634-1643. PMID 24021779
- Doukky R, **Frogge N**, Bayissa YA, et al. The prognostic value of transient ischemic dilatation with otherwise normal SPECT myocardial perfusion imaging: A cautionary note in patients with diabetes and coronary artery disease. *Journal of Nuclear Cardiology*. 2013, Oct; 20(5):774-84. PMID 23929206
- Doukky R, **Frogge N**, Balakrishnan G, et al. The prognostic value of cardiac SPECT Performed at the Primary Care Physician's Office. *Journal of Nuclear Cardiology*. 2013, Aug; 20(4):519-28. PMID 23475438.

#### Book Chapters

- Thakker P, Lasala J, **Frogge N**. Chapter 14: Abrasion, Grinding, Pulverization, Vaporization, and Extraction: Debulking Options for PCI of Calcified Coronary Lesions. *Debulking in Cardiovascular Interventions and Revascularization Strategies*. 1<sup>st</sup> edition. Elsevier. Pre-print September, 2021.
- Frogge N**, Barger P, Sintek M. Chapter 4: Ischemic Heart Disease. *Washington Manual of Medical Therapeutics*. 36<sup>th</sup> ed. Philadelphia, Pa.: Lippincott Williams & Wilkens; 2020.

#### Abstracts

- Frogge N**, Schulte L, Kosoko-Thoroddsen T, Sintek M, Melby S, Lasala J, Roberts H, Zajarias A. Comparison of Bleeding and Vascular Complications With Single vs Double ProGlide Vascular Closure After Transcatheter Aortic Valve Replacement. Presented at TCT 2022 (Boston, MA). *Journal of the American College of Cardiology*. 2022, Sep; 80(12):B247-B248.
- McNeely C, Spertus J, Singh J, Kurz H, House J, **Frogge N**, Lindner S, Kulkarni H, Masoudi F, Amin A. The Incremental Cost of Acute Kidney Injury after Percutaneous Coronary Intervention in the United States: Implications for Practice in the United States. Abstract presented at ACC 2019 Scientific Sessions (New Orleans, LA). *Journal of the American College of Cardiology*. 2019, Mar; 73(9):31740-1.
- Frogge N**, Khanagavi J, Hayes K, Doukky R. The Impact of Appropriate Use Criteria on the Cost-Effectiveness of SPECT-MPI. Abstract presented at the American Society of Nuclear Cardiology 2017 Annual Scientific Session (Kansas City, MO). *Journal of Nuclear Cardiology*. 2017, Aug; 24(4):1461-1496.
- Appis A, Hayes K, Khoudary G, **Frogge N**, Williams KA, Doukky R. Impact of Appropriate Use on Cancer Risk in Patients Undergoing SPECT Myocardial Perfusion Imaging. Abstract presented at ACC 2014 Scientific SessionS (Washington, DC). *Journal of the American College of Cardiology*. 2014; 63 (12): A300 (1247-22).
- Hayes K, **Frogge N**, Doukky R. Inappropriate Use of Myocardial Perfusion Imaging in Women: Has the Gender Bias Pendulum Swung Too Far? Abstract presented at ACC 2014 Scientific Sessions (Washington, DC). *Journal of the American College of Cardiology*. 2014; 63 (12): A300 (1247-21).
- Nazir N, Hayes K, **Frogge N**, Doukky R. Impact of Socioeconomic status and insurance carrier on appropriate use criteria in private community-based office practice. Abstract presented at ACC 2014 Scientific Sessions (Washington, DC). *Journal of the American College of Cardiology*. 2014; 63 (12): A301 (1247-27)
- Hayes K, **Frogge N**, Doukky R. Impact of Appropriate Use on the Cost Effectiveness of SPECT Myocardial Perfusion Imaging. Abstract presented at the American College of Cardiology 2014 Annual Scientific Session (Washington, DC). *Journal of the American College of Cardiology*. 2014; 63 (12): A300 (1247-24).
- Doukky R, **Frogge N**, Balakrishnan G, et al. Non-adherence to appropriate use criteria impairs the prognostic value of myocardial perfusion imaging. *Journal of the American College of Cardiology*. 2013; 61(10):A243.

**Frogge N**, Balakrishnan G, Dontaraju VS, et al. The prognostic value of cardiac SPECT performed at low-volume primary care physician office using mobile nuclear cardiac laboratory: The first prospective cohort study. *Journal of Nuclear Cardiology*. 2012, Aug. 19(4):832.

Balakrishnan G, **Frogge N**, Brown KH, et al. The impact of adherence to appropriate use criteria on the prognostic value of SPECT stress myocardial perfusion imaging performed at the primary care physician's office. *Journal of Nuclear Cardiology*. 2012, Aug. 19(4):849.

#### *Invited Presentations*

**Frogge N**, Kachroo P, Moon M, Barger M, Lindley K. Two Big, Two Fail: Massive Ectasia Of The Right Coronary Artery After Reimplantation From The Pulmonary Artery, And Giant Aneurysm Of The Left Coronary Artery. Presented at AHA 2019 Scientific Sessions. Philadelphia, PA. 2019, November 18.

**Frogge N**, Amin A. Cardiology Grand Rounds: The Bleeding Risk-Treatment Paradox in PCI. Washington University School of Medicine. St. Louis, MO. 2020, June 5.

**Frogge N**, Braverman A. Cardiology Grand Rounds: Patient Management Conference. Washington University School of Medicine. St. Louis, MO. 2019, May 16.

**Frogge N**, Sadhu J. Cardiology Grand Rounds: Patient Safety and Extubation in the CCU. Washington University School of Medicine. St. Louis, MO. 2017, Oct 11.

**Frogge N**, Doukky R. The Impact of Appropriate Use Criteria on the Cost-Effectiveness of SPECT-MPI. Poster presentation at the American Society of Nuclear Cardiology 2017 Annual Scientific Session. Kansas City, MO. 2017, Sep 15.

**Frogge N**, Pisano J. HIV-associated neurocognitive dementia. Morning Report at the University of Chicago Internal Medicine Residency Program. 2016, Mar 8.

**Frogge N**, Nayak H. Risk of acquired long QTc and Torsade de Pointes with commonly prescribed non-cardiac medications. Morning Report at the University of Chicago Internal Medicine Residency Program. 2015, Sep 15

**Frogge N**, Doukky R. The prognostic value of cardiac SPECT performed at the primary care physicians' offices. Rush University Medical Center Research Forum. Chicago, IL. 2012, Apr 11.

**Frogge N**, Doukky R. The prognostic value of cardiac SPECT performed at primary care physician offices using mobile nuclear cardiac laboratory: The first prospective cohort study. Young Investigator's Competition, American Society of Nuclear Cardiology Annual Conference. Baltimore, MD. 2012, Sep 7

#### **WORK & RESEARCH EXPERIENCE**

Riverside Medical Center (Kankakee, IL)	2022- Present
<i>Faculty, Interventional and Structural Cardiology</i>	
<ul style="list-style-type: none"><li>Interventional and structural cardiologist - specializing in complex coronary disease, valvular heart disease, and transcatheter valve repair/replacement - at a Truven Top 100 Hospital.</li></ul>	
Washington University School of Medicine (St. Louis, MO)	2017 - 2022
<i>Clinical Fellow</i>	
<ul style="list-style-type: none"><li>Analysis of NCDR PCI registry for value-based PCI outcomes.</li><li>Advisor: Amit Amin, MD, MSc, FACC, Assistant Professor of Medicine, Interventional Cardiology, Washington University School of Medicine</li></ul>	

Rush University Medical Center (Chicago, IL) <i>Clinical Research Fellow</i>	2010 - 2014
<ul style="list-style-type: none"> <li>• Managed implementation, primary analysis, publication, and secondary analysis of a 2-year, prospective cohort study of over 1,500 nuclear cardiology patients.</li> <li>• Advisor: Rami Doukky, MD, FACC, FACP, Director of Echo &amp; Stress Lab of Rush Medical Center, Chair of Cardiology Section John H Stroger Cook County Hospital</li> </ul>	
Centene Corporation (St. Louis, MO) <i>MBA Intern – Medical Management</i>	2008- 2010
<ul style="list-style-type: none"> <li>• Designed and executed a prospective, randomized cohort study to study effectiveness of case management using predictive risk modeling software (ImpactPro).</li> <li>• Created a standardized algorithm for identification of high-risk members and enrollment in case management.</li> </ul>	

**PROFESSIONAL MEMBERSHIPS**

American Heart Association	2013 – Present
Alpha Omega Alpha	2014 – Present
American College of Cardiology	2018 – Present
American Society of Echocardiography	2018 – Present
Society for Cardiovascular Angiography & Interventions	2020 – Present