

*JIM* is the official publication of the American Federation for Medical Research (AFMR).

**Editor-in-Chief**

**Richard W. McCallum, MD,**  
 Gastroenterology, El Paso, TX

**Editor Emeritus**

**Michael McPhaul, MD**  
 Endocrinology, Dana Point, CA

**Associate Editors**

**Michael S. Bronze, MD**  
 Infectious Disease, Oklahoma City, OK

**Paul Casner, MD**  
 Geriatrics, El Paso, TX

**David P. Cistola, MD, PhD**  
 Endocrinology, El Paso, TX

**Ricardo Correa, MD**  
 Endocrinology, Phoenix, AZ

**Samrat U. Das, MD**  
 Pediatrics, Durham, NC

**Patrice Delafontaine, MD, FACC, FACP,**  
 FAHA, FESC; Cardiology New Orleans, LA

**Alok Dwivedi, PhD**  
 Biostatistics & Epidemiology, El Paso, TX

**Octavian C. Ioachimescu, MD, PhD**  
 Pulmonary, Allergy, Critical Care, Sleep

Medicine & Health Outcomes Decatur, GA

**Richard A. Lange, MD, MBA**  
 Cardiology, El Paso, TX

**Robert T. Means, Jr., MD**  
 Hematology/Oncology, Johnson City, TN

**MingMing Ning, MD, MMSc**  
 Neurology, Boston, MA

**Don C. Rockey, MD**  
 Hepatology, Charleston, SC

**Peter Thompson, MD, MS**  
 Psychiatry, El Paso, TX

**Peter N. Van Buren, MD**  
 Nephrology, Dallas, TX

**G. Nicholas Verne, MD**  
 Gastroenterology, Memphis, TN

**Peter H. Wiernik, MD**  
 Hematology/Oncology, Chappaqua, NY

**Amir A. Zeki, MD, MAS**  
 Pulmonology, Davis, CA

**Yutong Zhao, MD, PhD**  
 Biomedical Research, Columbus, OH

**Social Media Editor**

**Amit Dey, MD**  
 Bethesda, MD

**Subscription Information**

*JIM* is published eight times a year (subscribers receive all supplements)  
 ISSN 1081-5589 (print)  
 ISSN 1708-8267 (digital)

**Institutional Rates 2020**

**Print**

*Institutional*

Extra Small \$1,391  
 Print Only \$1,391

Small \$1,391  
 Print Only \$1,391

Medium \$1,391  
 Print Only \$1,391

Large \$1,391  
 Print Only \$1,391

Extra Large \$1,391  
 Print Only \$1,391

*OA Article Publication Charges*  
 OA APC **CC-BY-NC** \$2000  
 OA APC **CC-BY** \$2,580

**Online**  
 Site licenses are priced on FTE basis and allow access by the whole institution.

***Journal of Investigative Medicine (JIM)* is the official publication of the American Federation for Medical Research (AFMR). In keeping with the mission of the AFMR, *JIM* publishes original, high quality clinical and translational research. *JIM* also provides an avenue by which investigators can publish scholarly reviews relevant to the research-focused mission of the AFMR.**

**Editorial Board**

**Stephanie L. Baer, MD**  
 Augusta, Georgia

**Area of expertise:** Infectious Disease  
**Dawn B. Davis, MD, PhD**  
 Madison, Wisconsin

**Area of expertise:** Endocrinology  
**Janice P. Dutcher, MD**  
 The Bronx, New York

**Area of expertise:** Oncology  
**Vijay Gayam, MD**  
 Brooklyn, New York

**Area of expertise:** Gastroenterology  
**L. Parker Gregg, MD**  
 Dallas, Texas

**Area of expertise:** Nephrology  
**Lei Huang, PhD, MD**  
 Hefei, China

**Area of expertise:** Oncology  
**Darine Kassar, MD**  
 El Paso, Texas

**Area of expertise:** Neurology  
**Armand A. Krikorian, MD, FACE**  
 Oak Lawn, Illinois

**Area of expertise:** Endocrinology  
**Joshua De Leon, MD**  
 Mineola, New York

**Area of expertise:** Cardiology  
**Suthat Liangpunsakul, MD, MPH**  
 Westfield, Indiana

**Area of expertise:** Gastroenterology - Liver  
**Shu-Yi Liao, MD**  
 Aurora, Colorado

**Area of expertise:** Genetics  
**Marco Marcellini, MD**  
 Houston, Texas

**Area of expertise:** Endocrinology

**Allison B. Reiss, MD**  
 Mineola, New York

**Area of expertise:** Cardiovascular  
**Florence Rothenberg, MS, MD**  
 Cincinnati, Ohio

**Area of expertise:** Cardiovascular  
**Leticia M. Ryan, MD, MPH**  
 Baltimore, Maryland

**Area of expertise:** Pediatric Critical Care  
**Michael Schivo, MD, MAS**  
 Sacramento, California

**Area of expertise:** Pulmonology  
**Iuliana Shapira, MD**  
 Hackensack, New Jersey

**Area of expertise:** Oncology  
**Attaya Suvannasankha, MD**  
 Indianapolis, Indiana

**Area of expertise:** Hematology  
**Abraham Thomas, MD, MPH**  
 Springfield, Massachusetts

**Area of expertise:** Endocrinology  
**Kristina Utzschneider, MD**  
 Seattle, Washington

**Area of expertise:** Endocrinology  
**Gloria Lena Vega, MD**  
 Dallas, Texas

**Area of expertise:** Endocrinology  
**Cherry Wongtrakool, MD**  
 Decatur, Georgia

**Area of expertise:** Pulmonology

**Karina Torralba, MD**  
 Loma Linda, CA

**Eastern Chair**  
**Shireen M. Atabaki, MD, MPH**  
 Washington, DC

**Eastern Chair-Elect**  
**Theo Trandafirescu, MD**  
 Bayside, NY

**Eastern Secretary-Treasurer**  
**Akankasha Goyal, MD**  
 New York, NY

**Midwestern Chair**  
**Joumana T. Chaiban, MD, FACE**  
 Chicago, IL

**Midwestern Chair-Elect**  
**Attaya Suvannasankha, MD**  
 Indianapolis, IN

**Midwestern Secretary-Treasurer**  
**Jennifer Alexander-Brett, MD, PhD**  
 Saint Louis, MO

**Southern Chair**  
**Samrat U. Das, MD**  
 Durham, NC

**Southern Chair-Elect**  
**Viranuj Sueblinvong, MD**  
 Decatur, GA

**Southern Secretary-Treasurer**  
**Stephanie L. Baer, MD**  
 Augusta, GA

**Western Chair**  
**Everardo Cobos, MD**  
 Bakersfield, CA

**Western Chair-Elect**  
**Prasanth Surampudi, MD**  
 Sacramento, CA

**Western Secretary-Treasurer**  
**Melanie Cree-Green, MD**  
 Aurora, CO

**AFMR National Council**

**President**  
**Leticia M. Ryan, MD, MPH**  
 Baltimore, MD

**President-Elect**  
**Janice P. Dutcher, MD**  
 Bronx, NY

**Immediate Past President**  
**Suthat Liangpunsakul, MD, MPH**  
 Westfield, IN

**Past President**  
**Florence Rothenberg, MS, MD**  
 Cincinnati, OH

**Secretary-Treasurer**  
**Peter H. Wiernik, MD**  
 Chappaqua, NY

**VP of Meetings & Programs**  
**Cherry Wongtrakool, MD**  
 Decatur, GA

**Membership Committee Chair**  
**Edgar Lerma, MD**  
 Berwyn, IL

**Publications Committee Chair**  
**Amir A. Zeki, MD, MAS**  
 Davis, CA

**Ex-officio**  
**Richard W McCallum, MD**  
 El Paso, TX

**Michael J. McPhaul, MD**  
 Dana Point, CA

**Councilors-at-Large**  
**Sidharth Mahapatra, MD, PhD**  
 Omaha, NE

**Abeer Moanna, MD**  
 Decatur, GA

**Allison B. Reiss, MD**  
 Mineola, NY

**Contact Details**

**Editorial Office**

Chloe Tuck and Rachel Wright  
 T: +1 919 240 5000

E: [info.jim@bmj.com](mailto:info.jim@bmj.com)

**Assistant to the Editor-in-Chief**  
 Karina Espino  
 E: [karina.espino@ttuhsc.edu](mailto:karina.espino@ttuhsc.edu)

**Production Editor**  
 Hannah Martin

E: [production.jim@bmj.com](mailto:production.jim@bmj.com)

**Publisher & Supplement Enquiries**  
 Kathy Lyons

**BMJ Publishing Group Ltd**  
 2 Hudson Place, 3rd Floor,  
 Hoboken, NJ 07030

E: [klyons@bmj.com](mailto:klyons@bmj.com)  
 T: +1 507 788 0836

**American Federation for Medical Research**  
 500 Cummings Center,  
 Suite 4400,  
 Beverly, MA 01915, USA

T: 978-927-8330  
[www.afmr.org](http://www.afmr.org)

**AFMR Membership Inquiries**  
 Aurelie Alger

E: [aalger@prii.com](mailto:aalger@prii.com)

**Customer support**  
 For general queries and support with existing and new subscriptions:

W: [support.bmj.com](mailto:support.bmj.com)  
 T: +44 (0)20 7111 1105

E: [support@bmj.com](mailto:support@bmj.com)

**Self-archiving and permissions**  
 W: [bmj.com/company/products-services/rights-and-licensing/](http://bmj.com/company/products-services/rights-and-licensing/)

E: [bmj.permissions@bmj.com](mailto:bmj.permissions@bmj.com)

**Advertising**  
 W: [bmj.com/company/for-advertisers-and-sponsor/](http://bmj.com/company/for-advertisers-and-sponsor/)

**Display Advertising ROW**  
 Sophie Fitzsimmons

T: +44 (0)20 3655 5612  
 E: [sfzsimmons@bmj.com](mailto:sfzsimmons@bmj.com)

**Online Advertising ROW**  
 Marc Clifford

T: +44 (0)20 3655 5610  
 E: [mclifford@bmj.com](mailto:mclifford@bmj.com)

**Display & Online Advertising Americas**  
 Cunningham Associates

T: +1 201 767 4170  
 E: [jcunningham@cunnasso.com](mailto:jcunningham@cunnasso.com)

**Reprints**  
**Author Reprints**  
 BMJ Reprints Team

E: [admin.reprints@bmj.com](mailto:admin.reprints@bmj.com)

**Commercial Reprints ROW**  
 Nadia Gurney-Randall

M: +44 (0)7866 262 344  
 E: [ngurneyrandall@bmj.com](mailto:ngurneyrandall@bmj.com)

**Commercial Reprints Americas**  
 Ray Thibodeau

T: +1 267 895 1758  
 M: +1 215 933 8484

E: [ray.thibodeau@contentednet.com](mailto:ray.thibodeau@contentednet.com)

**For all other JIM queries:**  
<http://jim.bmj.com/content/contact-us>