JACC: Basic to Translational Science, an open access journal, serves a forum for advancing the field Translational Cardiovascular Medicine, and as a platform for accelerating the translation of novel scientific discoveries into new therapies that improve clinical outcomes for patients affected with or at risk for Cardiovascular Disease. Thematic areas of interest include pre-clinical research; clinical trials; personalized medicine; novel drugs, devices, and biologics; proteomics, genomics and metabolomics; and early phase clinical trial methodology.

ABSTRACTING AND INDEXING

PubMed/Medline
PubMed Central
Directory of Open Access Journals (DOAJ)

EDITORIAL BOARD

EDITOR-IN-CHIEF
Douglas L. Mann, MD, St. Louis, MO | Washington University School of Medicine in St. Louis

DEPUTY EDITOR
L. Kristin Newby, MD, Durham, NC | Duke University Medical Center

ASSOCIATE EDITORS
Brian H. Annex, MD, Charlottesville, VA | University of Virginia School of Medicine
Nanette H. Bishopric, MD, Miami, FL | Miller School of Medicine at the University of Miami
Daniel P. Kelly, MD, Philadelphia, PA | Penn Cardiovascular Institute, Perelman School of Medicine at the University of Pennsylvania
William Robb MacLellan, MD, Seattle, WA | University of Washington Medical Center
Peter Libby, MD, Boston, MA | Brigham and Women’s Hospital Cardiovascular Medicine
Geoffrey Pitt, ScM, MD, PhD, Cornell, NY | Cardiovascular Research Institute at Weill Cornell Medical College
Eva van Rooji, PhD, Utrecht, the Netherlands | Hubrecht Institute

GUEST EDITOR-IN-CHIEF
Robert Roberts, MD, Tucson, AZ | The University of Arizona

GUEST EDITOR
Juan F. Granada, MD, Orangeburg, NY | Cardiovascular Research Foundation
STATISTICAL EDITOR
Cindy Green, PhD, Durham, NC

DIVISIONAL SENIOR DIRECTOR, PUBLISHING
Justine Varieur Tuco, MA, Washington, DC

AMERICAN COLLEGE OF CARDIOLOGY ADMINISTRATIVE STAFF
Kimberly Trevey, Managing Editor, Washington, DC
Meghan Valdes, Editorial Assistant, Washington, DC
Nandhini Kuntipuram, Director, Product Management, Digital Publishing, Washington, DC

SOCIAL MEDIA EDITORS
Reza Ardehali, MD, PhD, Los Angeles, CA | University of California Los Angeles
Meena S. Madhur, MD, PhD, Nashville, TN | Vanderbilt University Medical Center

ETHICS COMMITTEE
Holly Atkinson, MD, New York, NY
Lawrence S. Cohen, MD, New Haven, CT
Kim Fox, MD, London, UK
Robert Frye, MD, Rochester, MN
Phillip J. Landrigan, MD, New York, NY
Richard L. Popp, MD, Palo Alto, CA
Eric Prystowsky, MD, Indianapolis, IN
James Willerson, MD, Houston, TX

EDITOR-IN-CHIEF, JACC
Valentin Fuster, MD, PhD, New York, NY

EDITOR-IN-CHIEF, JACC: CARDIOVASCULAR IMAGING
Y. Chandrashekhar, MD, Minneapolis, MN

EDITOR-IN-CHIEF, JACC: CARDIOVASCULAR INTERVENTIONS
Renato D. Lopes, MD, PhD, FACC, Lexington, KY

EDITOR-IN-CHIEF, JACC: HEART FAILURE
Christopher M. O’Connor, MD, Durham, NC

EDITOR-IN-CHIEF, JACC: CLINICAL ELECTROPHYSIOLOGY
David J. Wilber, MD, Chicago, IL

EDITORIAL CONSULTANTS
Mark Anderson, MD, PhD, Baltimore, MD
Themistocles Assimes, MD, PhD, Palo Alto, CA
Noel Bairey-Merz, MD, Los Angeles, CA
Craig Basson, MD, Needham, MA
Jeffery Berger, MD, New York, NY
Don Bers, PhD, Davis, CA
Michael Bristow, MD, PhD, Aurora, CO
Daniel Burkoff, MD, PhD, Framingham, MA
John Burnett, MD, Rochester, MN
John Canty, MD, Buffalo, NY
Barbara Casadei, MD, Oxford, UK
Karen Christman, PhD, San Diego, CA
Peter Crawford, MD, PhD, Orlando, FL
Craig Emter, PhD, Columbia, MO
Zahi Fayad, PhD, New York, NY
Glenn Fishman, MD, New York, NY
Peter Ganz, MD, San Francisco, CA
Roberta Gottlieb, MD, Los Angeles, CA
Josh Hare, MD, Miami, FL
Ray Hershberger, MD, Columbus, OH
Carolyn Ho, MD, Boston, MA
Jennifer Ho, MD, Boston, MA
Farouc Jaffer, MD, PhD, Boston, MA
Tim Kamp, MD, PhD, Madison, WI
Walter Koch, PhD, Philadelphia, PA
David Lanfear, MD, Detroit, MI
Jin-Moo Lee, MD, St. Louis, MO
Richard Lee, MD, Boston, MA
Jonathan Lindner, MD, Portland, OR
Peter Liu, MD, Ottawa, Ontario, Canada
Eduardo Marban, MD, PhD, Los Angeles, CA
Ali Marian, MD, Houston, TX
Kenneth Margulies, MD, Philadelphia, PA
Peter McCullough, MD, MPH, Dallas, TX
Timothy Mckinsey, MD, Denver, CO
Javid Mosiehi, MD, Nashville, TN
Jorge Plutzky, MD, Boston, MA
David Port, PhD, Aurora, CO
Sumanth Prabhu, MD, Birmingham, AL
Hani Sabbath, PhD, Detroit, MI
Paul Simpson, MD, San Francisco, CA
Mark Sussman, PhD, San Diego, CA
Jenny Van Eyk, PhD, Los Angeles, CA
Richard Vega, MD, Orlando, FL
Xander Wehrens, MD, PhD, Houston, TX
Arthur Wilde, MD, PhD, Amsterdam, the Netherlands
Myles Wolf, MD, MMSc, Chicago, IL
Sean Wu, MD, PhD, Stanford, CA

2018-2019 OFFICERS
C. Michael Valentine, MD, FACC, President
Richard J. Kovacs, MD, FACC, Vice President
Howard "Bo" T. Walpole, Jr., MD, MBA, Treasurer
Andrew P. Miller, MD, FACC, Secretary and Board of Governors Chair
Cathleen C. Gates, Interim Chief Executive Officer

2018-2019 PUBLICATIONS AND EDITORIAL COORDINATION COMMITTEE
Paul L. Douglass, MD, MACC, Chair
Rhonda M. Cooper-DeHoff, MD, FACC, Annual Scientific Session Program Committee
Prasad C. Gunasekaran, MD, FIT Representative
Fadi G. Hage, MD, FACC
Spencer King III, MD, MACC
Fred M. Kusumoto, MD, FACC, Awards Committee
Renato D. Lopes, MD, PhD
Sandra M. Oliver-McNeil, DNP, ACNP-B, AACC Committee
Viviany R. Taqueti, MD, MPH, FACC
James E. Tcheng, MD, FACC, (Ex Officio) Chair, Digital Steering Committee
William J. Oetgen, MD, MBA, FACC, ACC Staff
Jancie Sibley, MS, MA, Executive Vice President, Education and Publishing
Justine Varieur Turco, MA, Divisional Senior Director, Publishing
GUIDE FOR AUTHORS

Introduction

JACC: Basic to Translational Science, an open access journal, serves a forum for advancing the field of Translational Cardiovascular Medicine, and as a platform for accelerating the translation of novel scientific discoveries into new therapies that improve clinical outcomes for patients affected with or at risk for Cardiovascular Disease. Thematic areas of interest include pre-clinical research; clinical trials; personalized medicine; novel drugs, devices, and biologics; proteomics, genomics and metabolomics; and early phase clinical trial methodology.

All submitted articles are reviewed by the Editor and Associate Editors. Articles are then sent out to two peer reviewers. All reviews are double-blinded. While all recommendations are discussed and considered by the group of Associate Editors, the final decision rests with the Editor-in-Chief. As a member of the JACC Family of Journals, this journal publishes only the highest quality content and is subject to the same rigorous, double-blind peer review standards as all the JACC journals.

Peer Review

The JACC Journals use a single-blind peer-review process. Papers are assigned an Associate Editor, who can assign up to two peer reviewers, although more can be assigned if necessary.

General Guidelines for Submission of Original Research Papers

JACC: Basic to Translational Science is not restricted to page length, however the Editors prefer that manuscripts not exceed 5,500 words (including references and figure legends). Note that if you are asked to revise your paper an alternate word limit may be specified by the Editors. Illustrations and tables should be limited to those necessary to highlight key data. Please provide gender-specific data, when appropriate, in describing outcomes of epidemiologic analyses or clinical trials; or specifically state that no gender-based differences were present.

The manuscript should be arranged as follows: 1) title page; 2) structured abstract and key words; 3) condensed abstract; 4) abbreviations list; 5) text; 6) acknowledgments (if applicable); 7) Funding Sources 8) references; 9) figure titles and legends; and 10) tables.

Other Paper Categories

The following information should be noted for these paper types:

STATE-OF-THE-ART PAPERS. The Editors will consider both invited and volunteered review articles. Such manuscripts must adhere to preferred length guidelines and require an unstructured abstract of no more than 5000 words. Authors should detail in their cover letters how their submission differs from existing reviews on the subject.

LEADING EDGE TRANSLATIONAL RESEARCH articles are discrete, highly significant, innovative or novel findings reported in a shorter format of 3,500 words or fewer in length. Editors will review for interest within seven (7) days of submission. These may be invited or volunteered manuscripts.

IMAGES IN BASIC TRANSLATIONAL RESEARCH. The editors will consider clinical or basic science images including studies in motion that illustrate either important classic or novel findings in the field of cardiovascular basic translational research. Text should consist of a title page and a description of no more than 300 words, including up to 4 references and a figure legend. Movie clips may be submitted in any of the standard formats (see "Video Requirements"). Although often presented within the context of a case, the images in this section are not intended as a vehicle for case reports.

EDITORIAL COMMENTS AND EDITORIAL VIEWPOINTS. Although usually invited, succinct opinion pieces will also be considered for JACC: Basic to Translational Science.

LETTERS TO THE EDITOR. A limited number of letters will be published. They should not exceed 500 words and should focus on a specific article that has appeared in JACC: Basic to Translational Science. Letters must be submitted within 3 weeks of the issue date of the article. No original data may be included. Type letters double-spaced and include the cited article as a reference. Provide a title page that includes authors’ names and institutional affiliations and a complete address for correspondence. Letters should be submitted online at http://www.jaccsubmit-basicts.org. Replies will generally be solicited by the Editors.
LEADING EDGE TRANSLATIONAL SCIENCE Articles are discrete, highly significant, innovative or novel findings reported in a shorter format of 3,500 words or fewer in length. Editors will review for interest within seven (7) days of submission. These may be invited or volunteered manuscripts.

Although usually invited, succinct opinion pieces relevant to a specific aspect of translational medicine will also be considered for JACC: Basic to Translational Science. They should not exceed 2,500 words and should have no more than a total of 2 figures and tables than 5 references.

Contact Details
We request that all manuscripts be submitted online at http://www.jaccsubmit-basicts.org.

Submission Guidelines
Manuscript submissions should conform to the guidelines set forth in the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication," available from http://www.ICMJE.org and most recently updated in December 2014.

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Ethics
Studies should be in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines. All papers submitted to the journal will be subject to plagiarism checks.

Human and Animal Rights
Human studies must be performed with the subjects written informed consent. Authors must provide the details of this procedure and indicate that the institutional committee on human research has approved the study protocol. If radiation is used in a research procedure, the radiation exposure must be specified in the Methods. Clinical trials should be registered.

Studies on patients or volunteers require ethics committee approval and informed consent which should be documented in your paper. Patients have a right to privacy. Therefore identifying information, including patients images, names, initials, or hospital numbers, should not be included in videos, recordings, written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes and you have obtained written informed consent for publication in print and electronic form from the patient (or parent, guardian or next of kin where applicable). If such consent is made subject to any conditions, the editorial office must be made aware of all such conditions.

Relationship With Industry Policy
The Editors require authors to disclose any relationship with industry and financial associations from within the past 2 years that might pose a conflict of interest in connection with the submitted article in both the cover letter and on the title page. All sources of funding for the work should be acknowledged in a footnote on the title page, as should all institutional affiliations of the authors (including corporate appointments). Other kinds of associations, such as consultancies, stock ownership, or other equity interests or patent-licensing arrangements, should be disclosed to the Editors in the cover letter at the time of submission. If no conflict of interest exists, please state this in the cover letter and on the title page. Relationship with industry guidelines apply to authors of all the following: Original Research Papers, State-of-the-Art Papers, Editorials and Viewpoints, Images, Editorial Comments, and Letters to the Editor.

ALL FORMS ARE NOW SIGNED AND SUBMITTED ELECTRONICALLY. Once a manuscript is accepted, the authors will be sent links to complete electronic Copyright Transfer and Relationship with Industry forms. Only the corresponding author may electronically sign the copyright form; however, ALL AUTHORS ARE REQUIRED TO ELECTRONICALLY SIGN A RELATIONSHIP WITH INDUSTRY FORM. Once completed, a PDF version of the form is e-mailed to the author. Authors can access and confirm receipt of forms by logging into their account online. Each author will be alerted if his/her form has not been completed by the deadline.

Only authors appearing on the final title page will be sent a form. YOU CANNOT ADD AUTHORS AFTER ACCEPTANCE OR ON PROOFS. After a paper is sent to the publisher, the links to the electronic forms will no longer be active. In this case, authors will be sent links to download hard copy forms that they may mail or fax to the JACC: Basic to Translational Science office.
**Exclusive Submission/Publication Policy**

Manuscripts are considered for review only under the conditions that they are not under consideration elsewhere and that the data presented have not appeared on the Internet or have not been previously published (including symposia, proceedings, transactions, books, articles published by invitation, and preliminary publications of any kind, excepting abstracts that do not exceed 400 words). On acceptance, transfer of copyright to the American College of Cardiology Foundation will be required. Elsevier will maintain copyright records for the College. Sharing of data from manuscripts that are under review or accepted but not yet published is expressly forbidden, unless permission is received from the JACC Journals Editorial Office. We ask that authors disclose this information during the submission process. JACC Journals does not consider the posting of manuscripts to a preprint server a prior publication, if they have not undergone peer review and provided that the following conditions are met: 1) when submitting a manuscript to a JACC journal, authors must acknowledge preprint server deposition and provide all associated accession numbers or DOIs; 2) versions of a manuscript that have been altered as a result of our peer review process may not be deposited; 3) the preprint version cannot have been indexed in MEDLINE or PubMed; and 4) upon publication in a JACC journal, authors are responsible for updating the archived preprint with a DOI and link to the published version of the article. Should the paper be accepted and published in a JACC journal, that JACC journal DOI should be considered to be the one representing this published work in all credits, citation, and attribution.

**Use of inclusive language**

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

**Contributors**

Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

**Authorship/Cover Letter**

Each author must have contributed significantly to the submitted work. If there are more than 4 authors, the contribution of each must be substantiated in the cover letter. If authorship is attributed to a group (either solely or in addition to 1 or more individual authors), all members of the group must meet the full criteria and requirements for authorship. To save space, if group members have been listed in JACC: Basic to Translational Science, the article should be referenced rather than reprinting the list. The Editors consider authorship to include all of the following: 1) conception and design or analysis and interpretation of data, or both; 2) drafting of the manuscript or revising it critically for important intellectual content; and 3) final approval of the manuscript submitted. Participation solely in the collection of data does not justify authorship but may be appropriately acknowledged in the Acknowledgment section.

**Copyright**

Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (see more information on this). Permitted third party reuse of open access articles is determined by the author's choice of user license.

**Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing

Find out how you can share your research published in Elsevier journals.

**Open access**

Please visit our Open Access page for more information.
**Language Services**

**English language help service:** Upon request, Elsevier will direct authors to an agent who can check and improve the English of their paper (before submission). Please visit our Support Center for further information.

**Patient Details**

Written consents must be provided to the editorial office on request. Even where consent has been given, identifying details should be omitted if they are not essential. If identifying characteristics are altered to protect anonymity, such as in genetic pedigrees, authors should provide assurance that alterations do not distort scientific meaning and editors should so note. If such consent has not been obtained, personal details of patients included in any part of the paper and in any supplementary materials (including all illustrations and videos) must be removed before submission. Animal investigation must conform to the "Position of the American Heart Association on Research Animal Use," adopted by the AHA on November 11, 1984. If equivalent guidelines are used, they should be indicated. The AHA position includes: 1) animal care and use by qualified individuals, supervised by veterinarians, and all facilities and transportation must comply with current legal requirements and guidelines; 2) research involving animals should be done only when alternative methods to yield needed information are not possible; 3) anesthesia must be used in all surgical interventions, all unnecessary suffering should be avoided and research must be terminated if unnecessary pain or fear results; and 4) animal facilities must meet the standards of the American Association for Accreditation of Laboratory Animal Care (AAALAC).

**PREPARATION**

**Text**

The text should be structured as Introduction, Methods, Results, and Discussion. Use headings and subheadings in the Methods, Results, and particularly, Discussion sections. Every reference, figure, and table should be cited in the text in numerical order according to order of mention.

For accepted papers, authors will be asked to provide a list of bulleted highlights and a summary to replace the abstract (see Visual Abstract instructions).

**Perspectives**

The authors should delineate clinical implications and translational outlook recommendations for their manuscripts. These should be listed in the manuscript after the Text and before the Acknowledgments and References. Please review the examples provided below. The implications describe the consequences of the study for current practice. The translational outlook identifies the potential barriers to clinical translation, emphasizing directions for additional research. **Clinical Competencies.** Competency-based learning in cardiovascular medicine addresses the 6 domains promulgated by the Accreditation Council on Graduate Medical Education (ACGME) and endorsed by the American Board of Internal Medicine (Medical Knowledge, Patient Care and Procedural Skills, Interpersonal and Communication Skills, Systems-Based Practice, Practice-Based Learning, and Professionalism) (http://www.acgme.org/acgmeweb). The ACCF has adopted this format for its competency and training statements, career milestones, lifelong learning, and educational programs. The ACCF also has developed tools to assist physicians in assessing, enhancing, and documenting these competencies (http://www.acc.org/Lifelong-Learning-and-MOC/Resources/Competencies).

Authors are asked to consider the clinical implications of their report and identify applications in one or more of these competency domains that could be used by clinician readers to enhance their competency as professional caregivers.

This applies not only to physicians in training, but to the sustained commitment to education and continuous improvement across the span of their professional careers.

**Perspectives**

**Translational Outlook.** Translating biomedical research from the laboratory bench, clinical trials or global observations to the care of individual patients can expedite discovery of new diagnostic tools and treatments through multidisciplinary collaboration. Effective translational medicine facilitates implementation of evolving strategies for prevention and treatment of disease in the community. The Institute of Medicine identified two areas needing improvement: testing basic research findings in properly designed clinical trials and, once the safety and efficacy of an intervention has been confirmed, more efficiently promulgating its adoption into standard practice (Sung NS, Crowley WF, Genel M. The meaning of translational research and why it matters. JAMA 2008;299:3140–3148).
The National Institutes of Health (NIH) has recognized the importance of translational biomedical research, emphasizing multifunctional collaborations between researchers and clinicians to leverage new technology and accelerate the delivery of new therapies to patients (http://www.ncats.nih.gov/about/about.html).

Authors are asked to place their work in the context of the scientific continuum, by identifying impediments and challenges requiring further investigation and anticipating next steps and directions for future research.

**Cover Letter**
Manuscripts must be submitted with a cover letter stating: 1) the paper is not under consideration elsewhere; 2) none of the papers contents have been previously published; 3) all authors have read and approved the manuscript; and 4) the full disclosure of any potential conflict of interest (see "Relationship With Industry Policy"). Exceptions must be explained. If there is no conflict of interest, this should also be stated in the cover letter. The corresponding author should be specified in the cover letter.

All editorial communications will be sent to this author. The corresponding author will be whom we contact for submission queries.

**Title Page**
Include the full title, authors names (including full first name and middle initial and degrees), total word count, and a brief title of no more than 15 words. List the departments and institutions with which the authors are affiliated, and indicate the specific affiliations if the work is generated from more than one institution (use superscript letters a, b, c, d, and so on). Also provide information on grants, contracts, and other forms of financial support, and list the cities and states of all foundations, funds and institutions involved in the work. Include any relationship with industry (see "Relationship With Industry Policy"). If there are no relationships with industry, this should be stated. Under the heading, "Address for correspondence," give the full name and complete postal address of the author to whom communications, author proofs, and reprint requests should be sent. Also provide telephone and fax numbers and an email address for the corresponding author.

A list of 3 to 5 highlights between about 75 to 120 words in length. These will be placed below the visual abstract in the final version of your manuscript.

**Structured Abstract**
Provide a structured abstract of no more than 250 words, presenting essential data in 5 paragraphs introduced by separate headings in the following order: Objectives, Background, Methods, Results, and Conclusions. Use complete sentences. All data in the abstract must also appear in the manuscript text or tables. For general information on preparing structured abstracts, see "Haynes RB, Mulrow CD, Huth EJ, Altman DG, Gardner MJ. More informative abstracts revisited. Ann Intern Med 1990;113:6976." An unstructured abstract is appropriate for review articles.

**Abbreviations**
The abbreviations of common terms (e.g., ECG, PTCA, CABG) or acronyms (GUSTO, SOLVD, TIMI) may be used in the manuscript. On a separate page following the condensed abstract, list the selected abbreviations and their definitions (e.g., TEE = transesophageal echocardiography). The Editors may determine which lesser known terms should not be abbreviated. Please consult "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication," available from http://www.ICMJE.org and most recently updated in December 2014, for appropriate use of units of measure.

**Acknowledgments**
Acknowledgments or appendices should be concise. Signed letters of permission from all individuals listed in the acknowledgments must be submitted to JACC: Basic to Translational Science.

**Statistics**
All publishable manuscripts will be reviewed for appropriateness and accuracy of statistical methods and statistical interpretation of results. We subscribe to the statistics section of the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication," available from http://www.ICMJE.org and most recently updated in December 2014. In the Methods section, provide a subsection detailing the statistical methods, including specific methods used to summarize the data, methods used for hypothesis testing (if any), and the level of significance
used for hypothesis testing. When using more sophisticated statistical methods (beyond t tests, chi-square, simple linear regression), specify the statistical package, version number, and nondefault options used. For more information on statistical review, see "Glantz SA. It is all in the numbers. J Am Coll Cardiol 1993;21:8357."

**Figures**

Figures and graphs submitted in electronic format should be provided in EPS or TIF format. Graphics software such as Photoshop and Illustrator, NOT presentation software such as Powerpoint, CorelDraw, or Harvard Graphics, should be used to create the art. Color images must be at least 300 DPI. Gray scale images should be at least 300 DPI. Line art (black and white or color) should be at least 1200 DPI and combinations of gray scale images and line art should be at least 1200 DPI. Lettering should be of sufficient size to be legible after reduction for publication. The optimal size is 12 points. Symbols should be of a similar size. Figures should be no smaller than 13 cm X 18 cm (5” X 7”). Please do not reduce figures to fit publication layout. If the manuscript is accepted for publication, the publisher will re-size the figures accordingly.

**ALL FIGURES MUST HAVE A TITLE AND A LEGEND.**

Our editors encourage authors to submit figures in color, as we feel it improves the clarity and visual impact of the images. If your original submission contains any line art or black and white figures that you would like to change to color, please email the revised color figures to the *JACC: Basic to Translational Science* editorial office during the revision process. Be sure to include correspondence, with the manuscript number, explaining the change.

Decimals, lines, and other details must be strong enough for reproduction.

Designate special features with arrows. All symbols, arrows, and lettering on halftone illustrations must contrast with the background.

**Visual Abstracts**

A visual abstract is a single, concise, pictorial summary of the main findings of the article. Our in-house medical illustrators with create the final printable version of these figures in consultation with the Editor-in-Chief and the authors. The visual abstract is specially designed to be placed at the beginning of the article and is accompanied by 3-5 "bulleted highlights" and a short summary written by the author and ultimately replaces the written abstract. See examples of articles with visual abstracts:

Example #1: [http://basictranslational.onlinejacc.org/content/1/1-2/3](http://basictranslational.onlinejacc.org/content/1/1-2/3)

Example #2: [http://basictranslational.onlinejacc.org/content/1/1-2/32](http://basictranslational.onlinejacc.org/content/1/1-2/32)

**Figure Legends**

Figure legends should be typed double-spaced on pages separate from the text; figure numbers must correspond with the order in which they are mentioned in the text.

**ALL FIGURES MUST HAVE A TITLE AS WELL AS A CAPTION.**

For example, Figure 1: Title - Caption, etc.

All abbreviations used in the figure should be identified either after their first mention in the legend or in alphabetical order at the end of each legend.

All symbols used (arrows, circles, etc.) must be explained.

If previously published figures are used, written permission from the original publisher is required. See STM Guidelines for details: [http://www.stm-assoc.org/permissions-guidelines](http://www.stm-assoc.org/permissions-guidelines). Cite the source of the figure in the legend.

**Tables**

Tables should be typed double-spaced on separate sheets, with the table number and title centered above the table and explanatory notes below the table. Use Arabic numbers. Table numbers must correspond with the order cited in the text.
ALL TABLES MUST HAVE A TITLE.

Abbreviations should be listed in a footnote under the table in alphabetical order. Footnote symbols should appear in the following order: *, , , ||, ,#, **, , etc.

Tables should be self-explanatory, and the data presented in them should not be duplicated in the text or figures. If previously published tables are used, written permission from the copyright holder (typically the original publisher) is required. Cite the source of the table in the legend.

References
Do not cite personal communications, manuscripts in preparation, or other unpublished data in the references; however, these may be included in the text in parentheses. Do not cite abstracts that are older than 2 years. Identify abstracts by the abbreviation abstr in parentheses. If letters to the editor are cited, identify them with the word letter in parentheses.

Reference Citations
Identify references in the text by Arabic numerals in parentheses on the line. The reference list should be typed double-spaced on pages separate from the text. The references should be numbered consecutively in the order in which they are mentioned in the text.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Reference Style
Use the following style and punctuation for references:

Periodical
List all authors if 6 or fewer, otherwise list the first 3 and add et al.; do not use periods after the authors initials. Please do provide inclusive page numbers as in example below.


Doi-based citation for an article in press If the ahead-of-print date is known, provide as in example below.


Chapter in book Provide authors, chapter title, editor(s), book title, publisher location, publisher name, year, and inclusive page numbers.


Online media Provide specific URL address and date information was accessed.


Material presented at a meeting but not published Provide authors, presentation title, full meeting title, meeting dates, and meeting location.

**Journal Abbreviations**

Use Index Medicus (National Library of Medicine) abbreviations for journal titles. It is important to note that when citing an article from the *JACC: Basic to Translational Science*, the correct citation format is J Am Coll Cardiol Basic Trans Science.

**Video Requirements**

Inclusion of videos in the published paper is at the discretion of the Editors.

1. Video submissions for viewing online should be one of the following formats: Audio Video Interleave (.avi), MPEG (.mpg), or Quick Time (.qt, .mov).

   AVI files can be displayed via Windows Media Player

   MPEG files can be displayed via Windows Media Player


   Quick Time files require Quick Time software (free) from Apple,


2. Videos should be brief (less than 2-5 min). Longer videos will require longer download times and may have difficulty playing online. Videos should be restricted to the most critical aspects of your research. A longer procedure can be restructured as several shorter videos and submitted in that form.

3. It is advisable to compress files to use as little bandwidth as possible and to avoid overly long download times. Video files should be no larger than 5 megabytes. This is a suggested maximum. If files are larger please contact the JACC: Basic to Translational Science office.

4. A video legends page giving a brief description of the content of each video should be included in the manuscript. Please note that ALL videos must be linked to figures or panels of a figure(s).

5. If your paper is accepted for publication you may wish to supply the editorial office with several different resolutions of your video files. This will allow viewers with slower connections to download a lower resolution version of your video.

**Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions [here](http://www.elsevier.com) to find out about available data visualization options and how to include them with your article.

**Citation**

It is important to note that when citing an article from *JACC: Basic to Translational Science*, the correct citation format is J Am Coll Cardiol Basic Trans Science.

**Author Enquires**

For enquiries relating to the submission of articles or to articles currently under review, please contact the *JACC: Basic to Translational Science* editorial office at jaccbts@acc.org. For information on articles that have been accepted for publication, please visit Elsevier's Authors Home at [https://www.elsevier.com/authors](https://www.elsevier.com/authors). Elsevier's Authors Home also provides the facility to track accepted articles and set up e-mail alerts to inform you of when an article's status has changed, as well as detailed artwork guidelines, copyright information, frequently asked questions, and more. Authors can order copies of the issue in which their article appears at a discounted rate; please contact Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043, Tel: 1-800-654-2452, E-mail: journalscustomerservicenews-integer@elsevier.com.

© Copyright 2018 Elsevier | [https://www.elsevier.com](https://www.elsevier.com)