Pathways to Publication:
A Workshop on Writing for Peer-Reviewed Journals
April 10, 2019

Supported by
Medical School Office for Faculty Affairs

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Why is it important to publish?

- **Expand knowledge:** Make a contribution to your field of study, enable others to build on your work

- **Enhance practice:** Allow others to apply your research findings (or evaluation data, new curriculum, innovative clinical approach, etc.)

- **Establish your expertise:** Build your external reputation, demonstrate feasibility to grant reviewers

- **Demonstrate your productivity:** To grant reviewers, employers, external evaluators (such as for P&T), trainees

- **Advance in your career:** Publishing in peer-reviewed journals continues to be “coin of the realm” in academia
What We’ll Cover Today

1. Identifying a Writing Project
2. Selecting a Journal, Types of Articles
3. Publication Ethics

BREAK

4. Writing Productively
5. Macro-level Writing Tips (major sections of scholarly articles)

BREAK

6. Micro-level Writing Tips (words, sentences, paragraphs)
7. Journal Peer Review Process, Responding to Reviewers

Post workshop:
- Full slide set
- Extra resources
- Brief evaluation
Part 1: Identifying a Writing Project
Look for Writing Opportunities

• What projects, activities, innovations are you already engaged in?
  – How interested are you in this topic/area?
  – What data could you collect?
  – What data are already available to you?

• Are there “spin off” projects, secondary data analyses, etc. that you could work on?
Before you get too far...

Review the literature

• What is already known?
• What have others reported?
• What new contribution will your project make?
• What is your unique angle, specific piece of the puzzle

Write a Purpose Statement or Question to Guide your Project:

• What is your innovation?
• What specific problem are you solving?
• What specific questions do you want to answer?
Example 1: Tracking resident duty hour violations

1. Current knowledge
   • Resident duty-hour restrictions introduced by ACGME
   • Usually tracked by resident self-report

2. Unknown, question:
   • Is resident self-reporting of duty hours valid? (concerns about recall bias, intentional misreporting)
   • Is time-stamped automatic data collection better?

3. Methods
   • Retrospective observational study
   • Compare RMS to parking card data

4. Results, implications
   • Significantly higher number of duty-hour violations in parking card data than in self-reported RMS data.

Quality Improvement Projects

- Institutions and journals starting to recognize QI as important scholarship

  - Immediate goal: Increase completeness, precision, transparency of published QI reports
  - Ultimate goal: Encourage publication of more and better QI reports

4th ANNUAL SQUIRE WRITING WORKSHOP
November 13 - 14, 2018
Dallas, TX

- Learn how SQUIRE can help improve the design and reporting of your interventions
- Expand your writing skills with faculty facilitators
- Advance a manuscript you bring, or use this workshop to get started on your writing
- Network with others working on similar goals.
Medical Education Projects

Peer-reviewed repositories for curricular materials

- “Stand-alone,” complete
- “Classroom” tested
- Ready for implementation by others
- Cited as peer-reviewed product
- Authors can access download reports

https://www.mededportal.org/
Medical Educator Development and Scholarship (MEDS)

We aim to improve the quality and effectiveness of medical education at the University of Minnesota Medical School, across the continuum of undergraduate, graduate and continuing education, by providing basic science and clinical medical educators (attending physicians, preceptors, residents, and other clinicians working with our students) with the tools they need to be effective teachers, educational leaders, and scholars.

Join the MEDS email list!  Learn More About Works In Progress
Example 2: Teaching POCUS

1. Current knowledge
   • Ultrasound is a valuable tool in the safe performance of procedures.
   • Emerging use for point-of-care assessment by internists

2. Unknown, question:
   • We don’t know
     – which ultrasound applications internists believe are the most useful,
     – what ultrasound skills internal medicine residency programs are teaching to trainees
     – what barriers may exist to the teaching or use of ultrasound in training settings.

3. Methods
   • 27-question survey administered to APDIM members

Goal: Launch a larger body of work

Point-of-Care Ultrasound in the Inpatient Setting: A Tale of Four Patients.

Entrusting internal medicine residents to use point of care ultrasound: Towards improved assessment and supervision.

Recommendations on the Use of Ultrasound Guidance for Adult Thoracentesis: A Position Statement of the Society of Hospital Medicine.

Credentialing of Hospitalists in Ultrasound-Guided Bedside Procedures: A Position Statement of the Society of Hospital Medicine.

Ultrasound guidance for lumbar puncture.

Point-of-care ultrasonography improves the diagnosis of splenomegaly in hospitalized patients.

Ultrasound in the diagnosis and management of pleural effusions.

Pocket-sized Ultrasound for Physical Diagnosis.

Feasibility and acceptability of a structured curriculum in teaching procedural and basic diagnostic ultrasound skills to internal medicine residents.

Point-of-Care Ultrasound in Internal Medicine: A National Survey of Educational Leadership.
Plan for Writing Opportunities

• What about this project or initiative might be of interest to others?
• IRB, Informed Consent
• Data collection


Other Sources of Ideas for Writing

• Talks you’ve given, posters you’ve presented
• Professional meetings

• Conversations with colleagues, listserves
• Journal tables of contents – topics, article types
Give Your Idea the “Sniff Test”

1. **So what?** Will it make a real contribution to the literature (vs “litter-ature”)

2. **Who cares?** (stakeholders, applicability)

3. **What venue?** (journals, other peer-reviewed repositories)
Additional Questions or Comments?
How Do I Identify Potential Journals?

• What journals do you read?
• Talk to colleagues, mentors, a librarian
• Scientific societies
• Peruse reference lists of articles in your field
• Keep an eye out for supplements, themed issues (call for papers)
• Electronic searches
  – Journal Citation Reports: https://jcr.clarivate.com
  – Indexing databases (access via U of MN libraries), e.g. PsychINFO
  – Ulrichsweb (serials directory): http://ulrichsweb.serialssolutions.com/

• Your suggestions?
Search term: Diabetes

Search results
Items: 1 to 20 of 115
Ulrichsweb (global serials directory)

http://ulrichsweb.serialssolutions.com/

Search term: Neurology
Welcome to Jane

Have you recently written a paper, but you're not sure to which journal you should submit it? Or maybe you want to find relevant articles to cite in your paper? Or are you an editor, and do you need to find reviewers for a particular paper? Jane can help!

Just enter the title and/or abstract of the paper in the box, and click on 'Find journals', 'Find authors' or 'Find Articles'. Jane will then compare your document to millions of documents in PubMed to find the best matching journals, authors or articles.

Keyword search

Instead of using a title or abstract, you can also search using a keyword search, similar to popular web search engines. Click here to search using keywords.

Beware of predatory journals

JANE relies on the data in PubMed, which can contain papers from predatory journals, and therefore these journals can appear in JANE's results. To help identify high-quality journals, JANE now tags journals that are currently indexed in MEDLINE, and open access journals approved by the Directory of Open Access Journals (DOAJ).

Additional information about Jane
Beware of Predatory Journals

- Take advantage of authors and academic pressure to publish
- Goal is to make money
- Can masquerade as legitimate open access journal (pay-to-publish model)
- Fail to follow accepted standards or best practices in scholarly publishing
- Agree to publish whatever the author submits in return for article processing charge (no peer review, little or no editing)

How big is the problem?
Number of scientific journals = ~28,000
Estimated number of predatory journals = 8000
Estimated number of predatory medical journals = 1200-1500

Detailed info on this topic is provided in the Resources packet
How Do I Select a Journal?

- *Peer-reviewed* (“refereed”) and Indexed

About the Annals:

“The Annals of Family Medicine is a peer-reviewed research journal to meet the needs of scientists, practitioners, policymakers, and the patients and communities they serve.”

Information for Authors:

“The journal is indexed in a number of databases, including MEDLINE, PsychINFO, EMBASE, Cinahl, Science Citation Index Expanded and Current Contents/Clinical Medicine. The *Annals* deposits all published content in PubMed Central (PMC).”
How Do I Find and Select a Journal?

• **Best fit for your content (write with end in mind)**
  
  – Who do you want to read your article?
    - General vs. subspecialty
    - Researchers, practitioners
    - Basic science, translational, clinical trials, educational research...
  
  – Where are articles similar to yours published?
  
  – What type of articles does the journal accept?

Example: **Journal of Clinical and Translational Science (JCTS)**

Subject categories include: Basic and Preclinical Research; Clinical Research; **Education**; Research Methods; Implementation, Policy and Community Engagement; and Translational Research Design and Analysis.

Within education: “...we encourage manuscripts that detail successful and innovative mentoring programs both within and outside of CTSAs.”

Pro Tip: Browse actual issues of the journal!
Article Types

- Most journals have a menu of article types
- Some require invitation or editor approval to submit
- Guidelines for preparation may differ by type
  - Word limits, # of tables/figs allowed, # refs allowed
  - Abstract: Required or not, structured or unstructured
  - Scope, emphasis, rigor
- Specific review criteria might apply
Article Types:

* Journal of Neurodevelopmental Disorders

- Research articles
- Reviews
- New methods
- Case reports
Article Types - *Pediatrics*

- Regular Article
- Advocacy Case Studies
- Case Report
- Commentary
- Diagnostic Dilemmas and Clinical Reasoning
- **Ethics Rounds**
- Family Partnerships

**Ethics Rounds**

- Discussions of cases that illustrate ethical dilemmas in patient care, research, or administration.
- Must contact assistant editor before submission.

**Quality reports**

- *Purpose:* Add to understanding of how to improve quality in clinical settings.
- *Content:* Describe the change process, whether successful or unsuccessful, and insights regarding why planned interventions did or did not lead to improvement.
How Do I Select a Journal?

• **Best fit for your content (write with end in mind)**
  – Who do you want to read your article?
  – What type of articles does the journal accept?
  – Where are articles similar to yours published?
  – What is journal’s reputation, does my article meet the bar?

**Some indicators of journal quality, reputation:**

- Impact Factor (flawed but useful)
- Frequently cited over time
- Older
- Larger circulation
- More selective (High # submission, lower acceptance rate)
- Often less specialized (e.g. Nature, Science, PLOS)
- Well known editor, board, institution, organization
• In a **given year**, average number of citations to articles that were published in the journal during the two preceding years.

For example, 2003 impact factor:
- $A =$ # of times articles published in 2001 and 2002 were cited by indexed journals during 2003.
- $B =$ total number of "citable items" (articles, reviews, proceedings) published in 2001 and 2002.
- 2003 impact factor = $A/B$

• Publications in journals with high impact factors are thought to be more prestigious, but varies by discipline.

  *Nature*: 41.6  
  *Academic Medicine*: 4.8  
  *Nature Microbiology*: 14.2  
  *Medical Teacher*: 2.45

• Journal Citation Reports: [https://jcr.clarivate.com](https://jcr.clarivate.com)
How Do I Select a Journal?

– **Does my article meet the bar?**
  - Mismatch can cause publication delays
  - Sometimes ok to aim high!
  - Think about “tiers”
  - Maintain a list
  - Almost never “one and done”: Expect needing to (re)submit to more than one journal

There’s a fit for nearly every article
# of scientific journals = ~28,000
• “All good science deserves to be published”
  – As long as your work reaches a high technical and ethical standard, *PLOS ONE* will publish it - and make it freely available to a global audience.

• Multidisciplinary Scope
  – *PLOS ONE* features reports of original research from all disciplines within science and medicine. By not excluding papers on the basis of subject area, *PLOS ONE* facilitates the discovery of the connections between papers whether within or between disciplines.

• Open/free access, in part supported by publication fee
  – $1,595 (higher for other journals in PLOS family), but can be reduced or waived
How Do I Select a Journal?

• **Time to publication**
  – Publishing cycle (weekly, monthly quarterly)
  – Review cycle
    • Find reviewers, receive critiques
    • Editorial review
    • Author revisions, resubmission (might have time limit)
  – Publication queue
    • Processing time for publication
    • Backlog of articles for publishing
    • Stipulations to authors in responding to proofs (30-45 days)

You can NOT submit to more than one journal at a time.
You can officially withdraw.
All Journals Share Similar Expectations

- Relevance to “our” readers
  - Importance
  - Originality
  - Usefulness to readers (and patients, learners, etc)
  - Excitement/“wow” factor
  - Timeliness

- Meets high standards for scientific rigor & ethics
- Conclusions are supported by the data
- Clear and engaging writing
Additional Questions or Comments?
Part 3: Ethical Issues in Writing Peer-Reviewed Publications
Protection of Research Subjects

Human subjects and data
• Include statement (usually in Methods):
  – Research was approved, or exempted from need for review, by the responsible review committee
  – Informed consent was obtained from all subjects.

Animal Experiments
• Include statement:
  – All institutional and national standards for the care and use of laboratory animals were followed
  – Identify the institutional and/or licensing committee approving the experiments
  – Follow ARRIVE guidelines (preclinical in vivo work): http://www.nc3rs.org.uk/arrive-guidelines

“The University of Minnesota’s institutional review board reviewed and approved the study protocol and ruled it exempt from informed consent requirements.”

“All animal experiments were approved by the Institutional Animal Care and Use Committee of the University of Minnesota.”
Plagiarism

- Attempting to pass off someone else's work as your own (missing or inadequate attribution)
  - Directly copying text from other sources
  - Copying ideas, images, or data from other sources
- **Self-plagiarism**: “when large chunks of text have been cut-and-pasted” from published, copyrighted work (grant proposals don’t count)
- Publishers may use plagiarism checking software such as CrossCheck to help editors verify the originality of submitted manuscripts. Selected submitted manuscripts are scanned and compared with the CrossCheck database.

http://www.nature.com/authors/policies/plagiarism.html
Overlapping Publication

• **Duplicate submission**: Must not submit a manuscript simultaneously to more than one journal (irrespective of language)

• **Duplicate publication**: Must not submit a manuscript that overlaps substantially with one already published, without clear reference to the previous publication

• **Usually not considered “pre-publication”**:  
  – Posters, published meeting abstracts, dissertations, required data in short abstracts in clinical trial registries

• **Be cautious about**:  
  – Salami science  
  – Press releases that include substantive data  
  – Posting your data or pre-acceptance manuscript online

Inappropriate Authorship

Criteria for authorship – you must meet all 4!

1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;

2) Drafting the work or revising it critically for important intellectual content;

3) Final approval of the version to be published;

4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Other contributions can and should be noted in Acknowledgements (but get the person’s permission to do so!)

Inappropriate Authorship

**Guest author** – Person named as an author without having made substantial contributions

**Ghost author** – Person who meets authorship criteria but has been omitted from the author list

**Journal policies continue to evolve:**
- Some require explanation of “who did what”
- Some allow “co-first authorship” ([http://www.fasebj.org/content/early/2013/07/09/fj.13-235630.full.pdf](http://www.fasebj.org/content/early/2013/07/09/fj.13-235630.full.pdf))
- Some have explicit guidelines for “group authorship” (large consortia or multisite trials)
Undeclared Conflicts of Interest

• COI exists when professional judgment concerning a primary interest (patients' welfare, validity of research) may be influenced by a secondary interest (personal or financial gain).

• Perceptions of COI are as important as actual COI

• COI must be **managed and declared**

• Must **report funding sources for the work** (sponsors) and their roles in study design; data collection, analysis, interpretation; writing of the report; decision to submit for publication

• “I had full access to all of the data in this study and I take complete responsibility for the integrity of the data and the accuracy of the data analysis.”
U of MN Policies and Resources

http://www.compliance.umn.edu/conflictResearch.htm
Altering Images

• Images should be “minimally processed” (may be technique dependent; adhere to “community standards”)

• Final image must correctly represent the original data

• If you process, provide details (image acquisition tools & settings; image processing software used)

• Processing (e.g., changing brightness and contrast) must be applied equally across the entire image and equally to controls

• Do not use touch up tools (Photoshop)

http://www.nature.com/authors/policies/image.html
Additional Information

- Author instructions for journal
  
  **ICMJE**
  INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS

  [www.icmje.org](http://www.icmje.org)

- [equator network](http://www.equator-network.org)

- COPE – Committee on Publication Ethics
  
  [https://publicationethics.org/](https://publicationethics.org/)
Additional Questions or Comments?
10-minute break!
Part 4: Maximizing your Writing Productivity
Writing Productively

- Think/pair/share
- We know what works
- So why don’t we do it?
- Strategies to get unstuck
- Supportive accountability
Think/pair/share about your writing process:

1. **What fuels your writing?**
   a) What aspects of writing do you enjoy? Why?
   b) What strategies have you used to make writing more enjoyable and keep a writing project moving forward?

2. **What slows down your writing?**
   a) What aspects of writing do you dislike? Why?
   b) What barriers have you encountered in your writing projects and process?
Appreciative Inquiry

Think about a time when a writing project went well.

- Tell about it.
- What was the situation?
- What were you doing, what were you feeling?
- What were others doing?
- What were the ingredients of that successful writing experience for you?
Think about....

What is your biggest writing challenge?
Do you get this?

If not, register at:

https://www.facultydiversity.org/join
NCFDD Core Curriculum

Strategic Planning
- Every Semester Needs A Plan
- Develop a Daily Writing Practice
- Manage Stress & Rejection

Healthy Relationships
- Engage in Healthy Conflict
- Cultivate a Network of Mentors & Sponsors
- The Art of Saying "No"

Work-Life Balance
- Align Your Time with Your Priorities
- Master Academic Time Management

Explosive Productivity
- Overcome Academic Perfectionism
- Move from Resistance to Writing
WE KNOW WHAT WORKS

WE KNOW WHAT WORKS

A DAILY WRITING PRACTICE

Daily writing leads to steady productivity and fewer feelings of anxiety over failure to meet expectations for productivity.

Mental shift: writing is the most important part of my success, therefore it’s my top priority.

Behavior shift: I write every day and create a way to be accountable that’s meaningful and works for me.

At least 30 minutes

First thing in the morning (if possible)
Books and Research on Writing

- Silvia P (2007) *How to Write a Lot*
- Furman R & Kinn J (2012) *Practical Tips for Publishing Scholarly Articles*
- National Center for Faculty Development & Diversity (NCFDD)  
  https://www.facultydiversity.org/join
Strategy: Establish a Writing Ritual
(Time, Place, Behavior)

“The right pen, the lucky clipboard, the same early morning hours, the ritualistic classroom procedure, the usual posture, the routine motions—foolish and inconsequential as they may seem to be—have the power to provide patterns that enhance the act of writing.”

Start a daily writing practice

12-Step Program

1. Hold a Sunday Meeting
2. Post your writing goals for the week
3. Start each day by reviewing your top priorities
4. Get your butt in your chair every day for at least 30 minutes
5. Set a timer
6. Manage your resistance
7. Stop when the timer goes off
8. Track your writing with a daily check-in
9. Give yourself a treat
10. Re-post your writing goals on Friday
11. Assess and adjust
12. Take the weekend off

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<table>
<thead>
<tr>
<th>Limiting Beliefs About Writing</th>
<th>What We Know From Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>I need huge blocks of uninterrupted Time.</td>
<td>The most productive writers write regularly, in small increments.</td>
</tr>
<tr>
<td>I must be inspired to write.</td>
<td>No you don’t. You show up, the inspiration comes once you get started.</td>
</tr>
<tr>
<td>Writing is what I do when I’m done thinking.</td>
<td>Writing <strong>IS</strong> thinking.</td>
</tr>
</tbody>
</table>
## Technical Errors

<table>
<thead>
<tr>
<th>COMMON TECHNICAL ERRORS:</th>
<th>TRY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You haven’t set aside a <em>specific time</em> for writing</td>
<td>Hold a <em>weekly meeting</em></td>
</tr>
<tr>
<td>2. You’ve set aside the <em>wrong time</em> to write</td>
<td>A different time (morning)</td>
</tr>
<tr>
<td>3. You have no idea <em>how much time</em> tasks take</td>
<td>Track your time</td>
</tr>
<tr>
<td>4. You’re the <em>wrong person</em> for the task</td>
<td>Delegate/outsourcing</td>
</tr>
<tr>
<td>5. The tasks you have set out are <em>too complex</em></td>
<td>Map the steps</td>
</tr>
<tr>
<td>6. You <em>can’t remember</em> what you have to do</td>
<td>Contain in 1 place</td>
</tr>
<tr>
<td>7. Your <em>space is disorganized</em></td>
<td>Organize your space</td>
</tr>
<tr>
<td>8. You have no idea <em>where</em> your time is going</td>
<td>Track your time</td>
</tr>
</tbody>
</table>

*Medical School* University of Minnesota
<table>
<thead>
<tr>
<th>COMMON PSYCHOLOGICAL BLOCKS:</th>
<th>POSSIBLE WORK AROUNDS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disempowerment</td>
<td>• Daily Writing + Accountability</td>
</tr>
</tbody>
</table>
| Perfectionism                | • Document your writing process  
|                              | • Establish Feedback Loops    
|                              | • Vary Your Standards         |
| Inner Critic                 | • Get to know your inner critic 
|                              | • Separate writing and drafting |
| Unclear Goals                | • Book with many chapters     |
External Realities

You can’t write because you’re in the midst of a life transition, personal loss, and/or something outside of your control.

This happens to everyone because we’re human beings. People die, babies are born, family members get sick, etc..

When you’re in transition:

✓ Adjust your expectations about what’s possible in that semester.
✓ Let people know what’s happened to you and allow them to support you.
✓ Ask for help that’s specific and/or seek professional assistance.
✓ Allow yourself time, knowing that you’re reaping the benefits of long-term daily writing.
Peer writing groups can increase writing productivity of faculty

## Support, Community, Peer Mentoring, and Accountability for Writing

<table>
<thead>
<tr>
<th>WHAT DO YOU NEED</th>
<th>POSSIBLE FORMATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Companionship</td>
<td>Write-On-Site Groups</td>
</tr>
<tr>
<td>Problem solving, face-to-face accountability and support</td>
<td>Writing Accountability Groups</td>
</tr>
<tr>
<td>Substantive feedback</td>
<td>Writing Feedback Groups</td>
</tr>
<tr>
<td>Projects, collaborators, co-authors</td>
<td>Collaborative Writing Groups</td>
</tr>
<tr>
<td>Support, accountability, tracking progress electronically</td>
<td>Online Writing Groups</td>
</tr>
<tr>
<td>Personalized accountability</td>
<td>Writing Buddies</td>
</tr>
</tbody>
</table>
Stages of Writing

Planning
- Identifying overall structure, deciding which steps to take and in what order

Revising
- Changing writing to more clearly (and succinctly) communicate

Composing
- Putting words together to convey meaning
Example tasks within each stage

<table>
<thead>
<tr>
<th>Planning</th>
<th>Composing</th>
<th>Revising</th>
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# Example tasks within each stage

<table>
<thead>
<tr>
<th>Planning</th>
<th>Composing</th>
<th>Revising</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finalizing data, other key information</td>
<td>Free writing</td>
<td>Marking up drafts</td>
</tr>
<tr>
<td>Notes, note cards</td>
<td>Outlining</td>
<td>Setting aside</td>
</tr>
<tr>
<td>Outlines</td>
<td>Drafting bullet points</td>
<td>Rereading</td>
</tr>
<tr>
<td>Mind Mapping</td>
<td>Drafting paragraphs</td>
<td>Reading aloud</td>
</tr>
<tr>
<td>Charts, Tables</td>
<td>Audio recording + transcription</td>
<td>Modeling prose to match sample article</td>
</tr>
<tr>
<td>Templates, modeling</td>
<td>Cutting and pasting from previous projects</td>
<td>Rewriting</td>
</tr>
<tr>
<td>Coauthor tasks</td>
<td></td>
<td>Editing</td>
</tr>
</tbody>
</table>

I need to...

• read more literature
• do one more experiment
• conduct more analyses
• complete this section
• revise this paragraph (for 10th time)

before I can move on.
Strategies for Getting Unstuck

Planning:

• **Prepare a talk.** Imagine that you must present your paper to colleagues tomorrow morning. How would you organize and present the information?

• **Talk to a colleague.** Discussing your project with an insightful coworker can help bring out the ideas hiding just below the surface.

Strategies for Getting Unstuck

Composing:

- **Leapfrog.** Stop writing sequentially. Jump around in draft to section that interests you. Fill in gaps later.

- **Change your writing method.** Leave your computer and use pen and paper.

- **Change your writing time.** Try writing during your “off time.” If you are a morning person, try writing in the evening for a while.

Strategies for Getting Unstuck

Revising:

• **Ask others for input.** But define what type, format.

• **Reverse outline.** Can do this for overall document, specific sections, even a single paragraph.

• **Rapid read and mark up.** No rewriting allowed! Mark where you slow down, stop, need to reread. Develop coding system.
Ask: What do I need? How do I get it?

- substantive feedback
- professional development
- emotional support
- intellectual community
- access to opportunities
- other needs
- sponsorship
- accountability for what really matters
- role models

This is mentoring!
Master Mentoring Program
https://hub.med.umn.edu/master-mentoring-program

Individual faculty short-term consultations
For individual faculty, at any career stage: Master Mentors will engage in short-term consultations to provide guidance in areas of need, including:

- building a community of mentors
- expanding networks
- identifying and accessing resources
- establishing a desired level of work-home integration
- overcoming professional challenges and cultural barriers
- career advancement
- increasing scholarly output

Departmental support for assessing, creating, and expanding mentoring models, including:

- Consultations
- Mentor training tailored to department’s needs
- 2-stage internal grant review (interdepartmental mock study sections)
- Writing groups

Development support for the Office of Faculty Affairs

- Obtain data on efficacy of individual mentoring and group mentoring programs across the Medical School
- Determine strategies for refining mentoring programs and make recommendations to the Office of Faculty Affairs
- Develop and disseminate centralized mentoring/professional development resources for faculty and departments
Additional Questions or Comments?
Part 5: Macro Level of Scientific Writing (section)
IMRaD Structure is Common…

but doesn’t guarantee a well-written article
“Scientific papers are not just baskets carrying unconnected facts like the telephone directory; they are instruments of persuasion.

Scientific papers, even if they are based on sound research, must argue you into believing what they conclude…” (p. 60).

## Research paper as critical argument

<table>
<thead>
<tr>
<th>Section</th>
<th>Element of critical argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Problem (question)</td>
</tr>
<tr>
<td>Results</td>
<td>Evidence (the data); initial answer</td>
</tr>
<tr>
<td>Materials and methods</td>
<td>Credibility of evidence</td>
</tr>
<tr>
<td>Discussion and Conclusion</td>
<td>Your valid evidence; supporting (and contradictory) evidence from others; final assessment. Answer!</td>
</tr>
</tbody>
</table>

Investigated an important (significant) question.

1. Don’t assume readers will “get it.” Instead, directly address need, value, importance of your work by answering questions such as these in the text:

**Research article:**
- What gap in knowledge does this project fill?
- How will filling this gap move the field forward?

**Review article:**
- Why is a *(another)* review needed on this topic? Why now?

**Education innovation:**
- What is novel about your approach? What educational need does it fill, what challenge does it overcome, or what opportunity does it leverage?
2. Be **specific** in arguing for your project’s significance. LIKA (“little is known about”) is **not** a sufficient justification!

**Example:**

To our knowledge, projects studying the use of rapid HIV testing in community outreach settings have not been reported.

This is an important area for research, because many outreach clients:

- Are at high risk for HIV
- Do not access HIV testing through standard venues (clinical settings)
- Are highly mobile, unlikely to return for test results after standard (non-rapid) testing.
Introduction: Small Group Exercise

1. Read the introduction to your assigned article (2-3 minutes)

2. In small groups, create a list of reasons (short bullet points) that the authors provide for why their work is important. (4-5 minutes)

As you develop your bulleted list, you might ask yourself:

• What important health or educational challenge/opportunity does this work attempt to address? (There could be more than one!)

• What important unanswered question(s) or gap(s) in knowledge does this work attempt to answer?

• Who might be interested in the answer to this question?
3. Use “funnel” format to organize your significance argument.

Introduction

Purpose Statement
(research question, hypothesis)

Scope of problem, significance

What we know

“Gaps”
Sepsis is a major cause of morbidity and mortality in patients who have chronic kidney disease and are receiving dialysis. No preventive treatment has been identified.

Can statins help?
Animal trials suggest “yes.”

Limited study in humans. Previous trials were small, observational; one larger, population-based cohort study.

“Therefore, our aim was to assess the effect of treatment with statin medications on the rates of sepsis in a prospective cohort study of patients who had chronic kidney disease and were receiving dialysis.”
4. Finish the introduction with a clear, strong purpose statement

- Explicitly signal the purpose, question, hypothesis:
  - The purpose of this study was…
  - This report describes…
  - We tested the hypotheses that…
  - Therefore, our first objective in these studies was…
  - In this study, we sought to extend our initial observations and to specifically test…
4. Finish the introduction with a clear, strong purpose statement

• Be detailed and precise:

General (weak):
We compared the efficacy of two treatments for metastatic breast cancer.

Specific (strong):
We conducted a *randomized controlled trial* to compare the effect of two treatments – *standard therapy X or new therapy Y* – on *one-year survival rates in women with metastatic breast cancer and under the age of 50.*
Example purpose statement for review article:

“We aimed to review reviewed the literature on the outcomes of student participation in student-run free clinics using the four levels of learning outcomes as described in Kirkpatrick’s hierarchy, namely: attitudes and motivation; skills and knowledge; behaviour, and patient and health care.

A. When describing previous literature,
   • Be selective (brief)
   • Cite yourself!
   • Focus on the findings
   • Include both supporting and contradictory/equivocal
   • Identify flaws if your work is an improvement

   The initial studies of the effects of ART on gene expression in HIV-infected persons have been limited in size and duration, and none included longitudinal analyses in persons with AIDS.

B. Draft, then revise after discussion is written.

C. Check for new literature before you submit.
Approached the question or problem with an appropriate study design and methods, yielding credible evidence.

“Devil is in the details” – but which details are needed?

Take advantage of:

- Reporting guidelines
- Model articles from excellent journals
- Instructions for authors
http://www.equator-network.org/

Reporting guidelines: what reviewers expect to see for certain article types or research designs

- CONSORT – randomized controlled trials
- STROBE – observational studies
- PRISMA – systematic reviews, meta-analyses
- SQUIRE – quality improvement in healthcare
- CARE – case reports, data from point of care
- ARRIVE – animal research, reporting in vivo experiments

Review these before you start a study, and as you develop manuscript
Example: Systematic Review (PRISMA)

- **Eligibility criteria for studies**: Study characteristics (e.g., length of follow-up) and report characteristics (e.g., language, years considered)

- **Information sources**: Databases with dates of coverage, date last searched.

- **Search protocol**: Full electronic search strategy for at least one database, including any limits used, such that it could be repeated

http://www.equator-network.org/reporting-guidelines/prisma/
The ARRIVE Guidelines Checklist
Animal Research: Reporting In Vivo Experiments

| Housing and husbandry | 9    | Provide details of:
|-----------------------|------|---------------------
|                       |      | a. Housing (type of facility e.g. specific pathogen free [SPF]; type of cage or housing; bedding material; number of cage companions; tank shape and material etc. for fish).
|                       |      | b. Husbandry conditions (e.g. breeding programme, light/dark cycle, temperature, quality of water etc. for fish; type of food, access to food and water, environmental enrichment).
|                       |      | c. Welfare-related assessments and interventions that were carried out prior to, during, or after the experiment.

| Sample size           | 10   | a. Specify the total number of animals used in each experiment, and the number of animals in each experimental group.
|                       |      | b. Explain how the number of animals was arrived at. Provide details of any sample size calculation used.
|                       |      | c. Indicate the number of independent replications of each experiment, if relevant.

| Allocating animals to experimental groups | 11   | a. Give full details of how animals were allocated to experimental groups, including randomisation or matching if done.
|                                            |      | b. Describe the order in which the animals in the different experimental groups were treated and assessed.

| Experimental outcomes | 12   | Clearly define the primary and secondary experimental outcomes assessed (e.g. cell death, molecular markers, behavioural changes).

| Statistical methods   | 13   | a. Provide details of the statistical methods used for each analysis.
|                       |      | b. Specify the unit of analysis for each dataset (e.g. single animal, group of animals, single neuron).
|                       |      | c. Describe any methods used to assess whether the data met the
1. When needed, give rationale for study design, methods

Example, exclusion criterion:

Because this test may give false positive results in the presence of active infection, we excluded patients who were febrile (>37.5 degrees C) or who had been treated with antibiotics during the previous 2 weeks.

2. Include definitions when appropriate

Examples:

- “From May 1 to October 31, 2006, all consecutive patients with a suspected TIA [transient ischemic attack] were prospectively evaluated…. TIA was defined on the basis of the World Health Organization standards.”

- “Relapse was defined as a relapse from continuous abstinence (i.e., a single puff from a cigarette; Hughes et al., 2003).”
3. Always provide details that emphasize data quality, (e.g., validated scales, controls)

**Example, Rater agreement**

“The study neurologist and radiology report had to agree on each finding. If disagreement, consensus had to be reached by discussing discrepancies.”

*Stroke. 2008;39:297-302*
4. Be consistent, logical with terms, label
   
   **Study Groups:**
   low-fat diet group, high-fat diet group
   Control (usual care), Treatment (intervention)
   
   **Variables:** Aggression or aggressive behavior?

5. Provide a method for every result (and vice versa)

6. Use a logical organization (subheads) – not necessarily chronological

7. Consider using tables, figures for clarity and brevity
**FIG. 1. Outline of visit 3.** Bedside glucose was measured every 10 min for adjustment of the GIR. Blood was collected every 30 min for measurement of glucose, insulin, and FFA. Three muscle biopsies were obtained from the vastus lateralis (biopsy 1, time 0 min; biopsy 2, time 120 min; biopsy 3, time 360 min) over the course of the lipid/glycerol infusion.

Persuade readers (and reviewers) that you have…

Presented all relevant data, in accordance with best reporting practices for this type of study (or analysis), and in a transparent, unbiased manner

### Results for Observational Studies [partial STROBE checklist]

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td><em>(a) Report numbers of individuals at each stage of study</em>—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, &amp; analysed</td>
</tr>
<tr>
<td></td>
<td><em>(b) Give reasons for non-participation at each stage</em></td>
</tr>
<tr>
<td><strong>Descriptive data</strong></td>
<td><em>(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders</em></td>
</tr>
<tr>
<td></td>
<td><em>(b) Indicate number of participants with missing data</em> for each variable of interest*</td>
</tr>
<tr>
<td><strong>Outcome data</strong></td>
<td><strong>Cohort study</strong> —Report numbers of outcome events or summary measures over time</td>
</tr>
<tr>
<td></td>
<td><strong>Case-control study</strong> —Report numbers in each exposure category, or summary measures of exposure</td>
</tr>
<tr>
<td></td>
<td><strong>Cross-sectional study</strong> —Report numbers of outcome events or summary measures</td>
</tr>
</tbody>
</table>

• Reporting by type of analysis
  – Measures of risk
  – Estimates, confidence intervals
  – Association and correlation analyses
  – Regression analyses
  – Survival analyses

• Presenting data and statistics in tables
Additional Writing Strategies

1. Section organization

• Typically most important to least important
  – Main question or outcome
  – Secondary aims or outcomes

• Sometimes chronological

• Follow order of methods

• Use descriptive subheads to guide reader (if allowed by journal)
Result subheadings - Examples

- Patient characteristics
- Effects on blood pressure
- Effects on LDL cholesterol
- Effects on Framingham risk score and estimated 10-year risk of coronary heart disease
- Safety evaluation
- Clinical laboratory test abnormalities

- ASC specks remain active in the extracellular space
- Extracellular specks are a danger signal
- ASC specks have 'prionoid' activities
- Anti-ASC opsonizes ASC specks and increases inflammation

Franklin et al. *Nature Immunology* 2014;15:727–737
2. Paragraph Organization

- Present *general result in first sentence.* Focus on the overall finding.

- Then provide explanatory details. *Subordinate the specific data that support the finding.*

- If necessary, add conclusion sentence to reinforce overall finding.
The 2 weight loss diets differed ...in their effect on postprandial glycemia and insulinenia. Incremental area under the curves for glucose (mean [SE], 2706 [394] vs 1070 [336] mg/dL per minute, \( P=0.003 \)) and insulin (5581 [859] vs 2044 [733] \( \mu \)IU/mL per minute, \( P=0.003 \)) were more than 2-fold greater for test meals from the low-fat vs low-glycemic load diet groups, respectively.
Additional Writing Strategies

3. Redundancy in sentence structure and word choice is desirable

Example  American Journal of Medicine 2013; 126(4): 362-365

- When evaluating the 16-hour violations for interns, a statistically significant difference was detected with violations occurring in 1% of self-report data compared with 4% in parking card data ($P < .001$). This difference amounts to 32 additional 16-hour violations detected over the 28-week period.

- When evaluating the 8-hour violations for all postgraduate year levels, a statistically significant difference of 1.0% violations in the self-report data compared with 3.0% in the parking card data was observed ($P < .001$). This difference amounts to 49 additional 8-hour violations detected over the 28-week period.
Persuade readers (& reviewers) that you have…

Discussion

Provided a thoughtful and balanced interpretation of your findings (the evidence) – what they mean, how they might be applied.

Conclusion

Complicating factors:

- Answer is unexpected
- Multiple interpretations are possible
- Study limitations: What can you really conclude?
Introduction vs. Discussion

Present a clear, compelling, concise, and well-supported argument for:

1. **The importance of your research idea** (the need for, or value of, whatever you investigated, studied, tested)
2. **The importance of your specific findings** (the value of the new knowledge that you generated).
“Before you write” Strategies

1. Read (re-read) the literature as you analyze and interpret your results.

- Identify relevance to your work
- Note support for/disagreement with your results
- Note similarities/differences in design, endpoints, sampling, etc.
- Get ideas for points covered in discussion sections
2. Identify your main message(s).
   - What’s the headline?
   - Is your “story” verified by your sources” (quality of your data, existing literature)

   • What are the key messages to be conveyed?
     1. ____
     2. ____
     3. ____

   • What is the significance/potential impact on practice or research?
     - Potential clinical benefits: ________________
     - Significant additions to the knowledge base of a particular animal model or mechanistic concept: ________________
3. Take your ideas for a test drive.

- Present your results and discussion ideas at suitable seminars, conferences.
- Circulate your main message(s) in writing to coauthors, other trusted colleagues for feedback.
1. Use “inverted funnel” or pyramid structure

Beginning: Answer to research question—single most important finding

- Generalization from your results, not a repetition of your results
Summary (Generalization) of Results

Example

“Our results suggest that student-run free clinic participation at the level experienced by students in our study has a protective effect against the declining attitudes towards the underserved that can occur as training progresses.”
Structuring Your Discussion

Middle:
- Interpret your results
- Discuss key studies relevant to your work
- Compare your work to that of others – if discordant, discuss objectively
- Offer explanation(s) for unexpected findings
- Briefly describe limitations (and strengths!)

More detailed interpretation of results in context of existing knowledge
Interpret your results

Example:

“Although we did not directly assess the impact of specific components of the SRFC student experience on attitudes toward the underserved, we can postulate that in addition to the extended contact with underserved populations that the clinic provides, the experience of working with service-oriented role models may have a positive influence on students.” [Followed by a few sentences citing other research on influence of role models]
Compare your work to that of others

Example:

“In prior work, Smith and colleagues (2014) documented a significant improvement in medical students’ self-reported attitudes toward the underserved… Our research builds on this work and other valuable shorter-term research by following students for a full two years, and by including not just medical students but also trainees from nursing, pharmacy, physical therapy, public health, and social work programs.”
Describe Limitations

Example:

Limitations of our study must be acknowledged.

- Survey response rates were low…
- Students were not randomly assigned to the SRFC experience…
- Results …may not be generalizable to other SRFC experiences that differ substantially from our university’s model – for example, those of shorter duration, with different criteria for participation (required vs. optional vs. selective application), and without an emphasis on interprofessional care delivery.
Structuring Your Discussion

End:
- Strong conclusion
- Signal the end
- Discuss implications
- Suggest future work

Your research will “shine a spotlight on one area of the truth.”
Additional writing strategies

2. If you recommend more research, don’t be vague:

Additional research is needed.

Further studies to confirm these findings would be helpful.

Instead, make (a few) specific suggestions

Examples

“Future research might test long-acting stimulant formulations for other substance-abusing ADHD adult populations, such as those with alcohol or cannabis use disorders.”

“Further examination of the associations observed in this study might be improved by using a more comprehensive set of smoking intensity outcome measures.”
Abstract and Title

Common Problems in Abstract:
1. Too much background
2. No purpose statement
3. Missing important details (methods)
4. Results don’t match text, tables, figures
5. No statement of main conclusion
6. Unfounded main conclusion
7. Importance of study not clear
8. Too many abbreviations
Additional Questions or Comments?
5-minute break!
Part 6: Micro Levels of Scientific Writing

Objectives

- Identify common clarity issues occurring at “micro” levels of a scientific manuscript:
  - Paragraphs
  - Sentences
  - Words

- Implement strategies to prevent and treat impediments to clarity

Golden rule: The need for clarity always outweighs the need for brevity!
Clarity Issues @ Paragraph Level

**Problem 1:** Too many points covered in single paragraph

**Problem 2:** Main point of a paragraph is difficult to discern (can’t see the forest for the trees)

**Solution:**

Adopt a paragraphing structure

- Point-first
- Point-last
Point-First Paragraphs

- Also called “topic-sentence development (TS-D) model”
- Present main point in first sentence.
- Then provide explanatory details.
- Allows reader to “skim read” effectively
Example (Results section):

The 2 weight loss diets differed...in their effect on postprandial glycemia and insulinemia.

Incremental area under the curves for glucose (mean [SE], 2706 [394] vs 1070 [336] mg/dL per minute, \( P=0.003 \)) and insulin (5581 [859] vs 2044 [733] \( \mu lU/mL \) per minute, \( P=0.003 \)) were more than 2-fold greater for test meals from the low-fat vs low-glycemic load diet groups, respectively.
Point-Last Paragraphs

• Open with a question or an argument
• Present evidence, develop the argument
• Wrap up with a conclusion.
• Helpful when you need to assemble an argument, pulling threads together to weave them into a single conclusion.
• Strong at both opening and resolution.
Example (Results):

We then questioned whether the phosphorylation of STAT1 at its tyrosine residue 701 is necessary for its downregulation.

Thus, we co-transfected...

As shown in Figure 3D...

There was only a relatively small increase in..., suggesting....

MORE

Taken together, our data suggested that NPM-ALK phosphorylates STAT1 at predominantly the Y701 residue, and by doing so, promotes its degradation.
**Problem 3:** Poor logic flow within the paragraph; lack of cohesion among sentences

**Solutions:**

- Apply the “known-new” contract when crafting sentences within the same paragraph

- Use appropriate transition words or phrases

*Cohesion:* the act or state of uniting or sticking together.
Apply the “Known-New Contract”
Apply the “Known-New Contract”

Example – original sentences

People are injuring themselves at home, work and out in public from slipping and falling.

The material of the shoe sole, the material of the floor surface that the individual is walking across, and a contaminant, like water or oil, that may decrease friction between the two materials all contribute to slipping.

Example – revised sentences

People are injuring themselves at home, work and out in public from slipping and falling.

Factors contributing to slipping include the material of the shoe sole, the material of the floor surface that the individual is walking across, and a contaminant, like water or oil.
<table>
<thead>
<tr>
<th>USE</th>
<th>TRANSITION WORDS</th>
<th>TRANSITION PHRASE</th>
<th>TRANSITION SENTENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>again, also, further, furthermore, in addition, moreover</td>
<td>In addition to X, we ...</td>
<td>Further experiments showed that ...</td>
</tr>
<tr>
<td>Concession</td>
<td>clearly, evidently, obviously, undeniably</td>
<td></td>
<td>Granted that X is ...</td>
</tr>
<tr>
<td>Comparison</td>
<td>also, likewise, similarly, etc.</td>
<td>As seen in ...</td>
<td>When A is compared with B ...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the same way,</td>
<td>As reported by ...</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>When compared to ...</td>
</tr>
<tr>
<td>Contrast</td>
<td>but, however, nevertheless, nonetheless, still, yet</td>
<td>In contrast to A ...</td>
<td>On difference is that ...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>On one hand; on the other hand ...</td>
<td>Although X differed ...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Despite X ...</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unlike X ...</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>On the contrary, ...</td>
<td></td>
</tr>
<tr>
<td>USE</td>
<td>TRANSITION WORDS</td>
<td>TRANSITION PHRASE</td>
<td>TRANSITION SENTENCE</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Example</td>
<td>for example, specifically</td>
<td>To illustrate X ...</td>
<td>An example of X is that ...</td>
</tr>
<tr>
<td>Explanation</td>
<td>here, therefore, in short</td>
<td>Because of X ...</td>
<td>One reason is that ...</td>
</tr>
<tr>
<td>Purpose</td>
<td>for this purpose</td>
<td>For the purpose of ...</td>
<td>The purpose of X was to ...</td>
</tr>
<tr>
<td>Result</td>
<td>consequently, generally, hence, therefore, thus</td>
<td>As a result of ...</td>
<td>Evidence for XYZ was that ...</td>
</tr>
<tr>
<td>Sequence/Time</td>
<td>after, finally, first, later, last, meanwhile, next, now, second, then, while, subsequently</td>
<td>After careful analysis of X ...</td>
<td>After X was completed, ...</td>
</tr>
<tr>
<td>Summary</td>
<td>in brief, in conclusion, in fact, in short, in summary</td>
<td>To summarize (our results) ...</td>
<td>As a summary of our results shows, ...</td>
</tr>
</tbody>
</table>
Clarity Issues @ Sentence Level

Problem 1: Subject-verb separation

Example:

Fourteen patients who were treated at the Children’s Hospital between August 1997 and July 2001 for malignant tumors that could not be excised composed the sample.

Separated by 21 words

Better:

The sample comprised 14 patients who were treated at the Children’s Hospital between August 1997 and July 2001 for malignant tumors that could not be excised.
Problem 2: Word placement

**Topic position (beginning of sentence)**
Contains info that links back to what reader already knows

**Stress position (end of sentence)**
Contains new info that writer wants to emphasize

1. Exercise is the best strategy for preventing falls in healthy adults aged 60 to 82 years.

   vs

2. For healthy adults aged 60 to 82 years, the best strategy for preventing falls is **exercise**.
Problem 3: Sentence Length

“There's not much to be said about the period except that most writers don't reach it soon enough.”
- William Zinsser

Example:

These results show that ATP and GTP are capable of binding to the same site in the mRNP but higher specificity is shown for ATP than for GTP, while the other nucleotides tested (CTP, UTP, AMP) did not stimulate the initiation of the translation, on the contrary, they produced some inhibition being most pronounced for UTP and CTP, suggesting that these nucleotides compete with ATP and GTP for the same site in the mRNP.

(Single sentence, 71 words)

Better:

These results show that ATP and GTP are capable of binding to the same site in the mRNP. Higher specificity is shown for ATP than for GTP. The other nucleotides tested (CTP, UTP, AMP) did not stimulate the initiation of the translation. On the contrary, they produced some inhibition being most pronounced for UTP and CTP, suggesting that these nucleotides compete with ATP and GTP for the same site in the mRNP.

(Three sentences, average 18 words)
Problem 3: Sentence Length

**Another solution:** If you write a long sentence, make the key point in a short initial clause.

**EXAMPLE:**

We focused on two members of this family: Rab5, which controls transport from the plasma membrane to the early endosome and regulates the dynamics of early endosome fusion, and Rab7, which governs membrane flux into and out of late endosomes.

[40 words]
### Problem 3: Sentence Length

**Another solution:** Replace phrases with simpler equivalents

<table>
<thead>
<tr>
<th>Empty Phrase (jargon)</th>
<th>Preferred Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>at this point in time</td>
<td>now</td>
</tr>
<tr>
<td>a number of</td>
<td>many</td>
</tr>
<tr>
<td>due to the fact that</td>
<td>because</td>
</tr>
<tr>
<td>during the time that</td>
<td>while</td>
</tr>
<tr>
<td>in close proximity to</td>
<td>near</td>
</tr>
<tr>
<td>give rise to</td>
<td>cause</td>
</tr>
<tr>
<td>if conditions are such that</td>
<td>if</td>
</tr>
<tr>
<td>are of the same opinion</td>
<td>agree</td>
</tr>
<tr>
<td>ascertain the location of</td>
<td>find</td>
</tr>
<tr>
<td>the vast majority of</td>
<td>most</td>
</tr>
<tr>
<td>a greater number of</td>
<td>more</td>
</tr>
</tbody>
</table>
Problem 4: Lack of Parallel Structure

Example:

Prolonged febrile illness, together with subcutaneous nodules in a child, could be due to an infection with a Gram+ organism, but it could also be that the child suffers from rheumatic disease.

Better:

Prolonged febrile illness, together with subcutaneous nodules in a child, could be due to an infection with a Gram+ organism or due to rheumatic disease.
Problem 5: Faulty comparisons

Sentence is comparing things that cannot logically be compared, or the comparison is ambiguous as written.

**Example 1**
She enjoyed Hayden’s symphonies more than Mozart.

**Revision**
She enjoyed Hayden’s symphonies more than those of Mozart.

**Example 2**
The side effects associated with taking Drug A were similar to Drug B.

**Revision**
The side effects associated with taking Drug A were similar to those associated with taking Drug B.
Problem 5: Faulty comparisons

The adjectival phrase *compared with* is often “misplaced” in the sentence – it is not placed next to the noun that it actually is meant to describe.

Example:

Men are more likely to benefit from this *drug* compared with *women*.

Revision, with modifier correctly placed:

*Compared with women*, men are more likely to benefit from this drug.
What about this example?

Blood pressure decreased 20% in Group A compared with Group B.

1. What happened to bp in Group B?
2. How is what happened in Group A different from (or similar to) what happened to Group B?
Could be interpreted in several ways

Blood pressure decreased 20% in Group A compared with Group B.

<table>
<thead>
<tr>
<th>What really happened?</th>
<th>How can text be clarified?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BP decreased only in Group A, not in Group B.</strong></td>
<td>From time 1 to time 2, blood pressure decreased 20% in Group A but remained stable in Group B.</td>
</tr>
<tr>
<td><strong>BP decreased in both groups, but decline was more pronounced in Group A than in Group B.</strong></td>
<td>The decline in blood pressure from time 1 to time 2 was 20% greater in Group A than in Group B.</td>
</tr>
</tbody>
</table>
Poorly written comparisons are so prevalent in the scientific literature that most of us, having “learned by reading,” are tempted to repeat the errors we see in print.

Resist the temptation!
Clarity Issues @ Word Level

Problem 1: Imprecise Words

Example:
Renal blood flow was drastically compromised when the aorta was obstructed.

("Compromise" = "to place at risk.")

Better:
greatly reduced
reduced by 80%
Problem 1: Imprecise Words

Example:

The study involved 15 healthy men.

Better:

Fifteen healthy men enrolled in the study.
Problem 2: Overuse of nominalizations

- Nominalizations = verbs made into nouns
  \((-tion, -ment, -ence, -al)\)
- Often done to make statements appear more neutral.
- Make the writing less “active” (lively, interesting, engaging)
- Often requires several words when one word would do.
Solution: Turn nominalizations into verbs.

Examples

- We made the determination that community members are effective intervention leaders.
- Separation of the compounds was accomplished by liquid chromatography.
- The occurrence of these behaviors was noted in three subjects.

Revision

- We determined that community members are effective intervention leaders.
- The compounds were separated by liquid chromatography.
- These behaviors occurred in three subjects.
Problem 3: Vague Pronoun Antecedents

Antecedent = the noun that a pronoun is replacing

Example 1:
Monkeys of this species are not susceptible to these diseases, so research on them is hampered.

Example 2:
Children are born with billions of neurons in their brains, but in order for them to be connected properly they need to be touched and talked to extensively by their parents.

Solution: Be very clear in referencing pronoun antecedents (inserting original noun as needed) so readers will understand your meaning rapidly (on first read)
Problem 4: Word Clusters (pile ups)

Lengthy strings of words used as adjectives for another noun.

Examples:

• the negative penicillin skin test result group
• bilateral anterior magnetic phrenic nerve stimulation
• two-dimensional real time ultrasonographic blood flow detection techniques
Solution: Disentangle the clusters by inserting one or more prepositions. This helps to clarify the relationship between words.

Problematic
• cultured sheep pulmonary artery endothelial cells
• artificial intelligence information retrieval approaches

Revision
• cultures of endothelial cells from the pulmonary artery of sheep
• Approaches that use artificial intelligence to retrieve information [?]
• Approaches for retrieving information about artificial intelligence [?]
“A clear sentence is no accident. Very few sentences come out right the first time, or even the third time. Remember this in moments of despair. If you find that writing is hard, it's because it is hard. It's one of the hardest things that people do.”

- William Zinsser
Additional Questions or Comments?
Part 7:
Journal Peer Review Process
Responding to Critiques
Review Process

Electronic submission

Assignment to Deputy/Associate Editor

Screening (saves time), if favorable...

Assignment to 2-3 external reviewers

Decision review by editorial board
“Professor Johannsen’s paper was zippy. It had robust vocabulary and I almost felt that I could dance to it. I would give it a 7.”
• Internal review, editor-in-chief and associate editors consider the following:
  – Is topic important and of interest to faculty and administrators of medical institutions?
  – Recent publication of related articles? If so, does manuscript add something new?
  – For research papers: Sample size, Design, Analysis, Discussion adequate and appropriate?
  – Is the paper written clearly? Is it logically consistent?

• Submission to external reviewers follows
**Example: JGIM article review form**

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEREST TO READERSHIP OF <em>JGIM</em>:</td>
<td>High 1 2 3 4 5 Low</td>
</tr>
<tr>
<td>ORIGINALITY, NEW INFORMATION:</td>
<td>High 1 2 3 4 5 Low</td>
</tr>
<tr>
<td>STUDY DESIGN:</td>
<td>__adequate __contains minor flaws __seriously flawed</td>
</tr>
<tr>
<td>STATISTICAL ANALYSES:</td>
<td>Appropriate 1 2 3 4 5 Inappropriate or absent</td>
</tr>
<tr>
<td>Recommend review by Statistical Consultant:</td>
<td>_*Yes __No</td>
</tr>
<tr>
<td>VALIDITY OF CONCLUSIONS:</td>
<td>Valid 1 2 3 4 5 Invalid</td>
</tr>
<tr>
<td>CLARITY OF WRITING:</td>
<td>High 1 2 3 4 5 Low</td>
</tr>
<tr>
<td>RECOMMENDATIONS:</td>
<td>&gt;&gt;&gt;ACCEPT: &gt;&gt;&gt;REJECT &gt;&gt;&gt; RECONSIDER</td>
</tr>
<tr>
<td>( ) as is</td>
<td>( ) with major revisions</td>
</tr>
<tr>
<td>( ) conditional</td>
<td>( ) with minor revisions</td>
</tr>
</tbody>
</table>
Reviewers Provide:

- Remarks to the *editor* (his/her eyes only)
- Remarks to the *author* include
  - Conceptual issues or comments on adequacy of methods, design, etc.
  - Detail items, e.g. numbering, typo’s, spelling, references
- Publishing *recommendation* to the editor

**Editor** ultimately decides your fate.
• Expect at least 8 weeks

• The Verdict:

1. Acceptance without revisions

2. Rejection, no invitation to resubmit
   • *No peer review (triaged)*
   • *Negative peer review*

3. Rejection “in its present form”
   • *Revise, resubmit, re-review, reconsider*
   • *Major revisions, minor revisions*

Don’t let it languish!
Revise to improve
Send to next journal
The Opportunity to Revise & Resubmit:

1. Carefully read, then re-read the comments.
2. **Compare your understanding of them with others.**
3. Informally rank them by priority (severity). Cluster like comments together.
4. **Decide: Resubmit to same journal, or new journal**
5. **Make a revision plan!**
6. Revise the manuscript.
7. Draft the response letter.
8. Finalize the response letter.
9. Cross-check response letter with manuscript.
10. And do all of this within the stipulated time frame.
“Major comments”

Generalizability

• Dependence severity is not discussed. It may be that these patients were less dependent, with higher functioning, thus more able to make each session. This should be addressed and may affect generalizability.

Analysis

• The data have to be reanalyzed using the number of BE positive urines over the total time period, imputing missing urines as positive and controlling for baseline differences in cocaine use severity.
“Minor comments”

- Not all tables, figures and supplements are cited in the text.
- Table 1: Please include study site.
- Results: Not always clear if they are crude or adjusted.
- Introduction, line 91: "outcomes." and suggest "several medications available for..."
- The authors should consider referencing use of prescription drug management programs, etc. when treating such patients to help in monitoring potential drug abuse
- Decide upon amphetamine salt or salts and maintain throughout.
Writing a Response to Reviewers

• **Rule 1:** Provide an overview, then quote the full set of reviews
• **Rule 2:** Be polite and respectful of all reviewers
• **Rule 3:** Accept the blame
• **Rule 4:** Make the response self-contained
• **Rule 5:** Respond to every point raised by the reviewer
• **Rule 6:** Use typography to help the reviewer navigate your response

Writing a Response to Reviewers

• **Rule 7:** Whenever possible, begin your response to each comment with a direct answer to the point being raised

• **Rule 8:** When possible, do what the reviewer asks

• **Rule 9:** Be clear about what changed relative to the previous version

• **Rule 10:** If necessary, write the response twice

The Response Letter

Dear Dr. Tenure, [The editor who sent you the reviews]

We are pleased to resubmit to you our manuscript entitled, “_______________,” MS #_____________. We found the reviewers’ critique of our initial submission to be very helpful. In responding to their comments, we believe our manuscript is greatly strengthened. Our point-by-point responses to their concerns and revision suggestions are outlined below:

Reviewer 1

1. [“Quote the specific critique point.”]

   Response: [Clear, concise, explanation of how you’ve revised the manuscript. Indicate sections and page numbers. Quote the changes in your response.]
<table>
<thead>
<tr>
<th>Reviewer Critiques</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Comments</td>
<td></td>
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</table>

R#1: 

R#3: 

<table>
<thead>
<tr>
<th>Title</th>
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Abstract

Introduction

R#2: 

R#4: 

<table>
<thead>
<tr>
<th>Methods</th>
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</table>
Use Responsive Language

1. We revised paragraph 2 of the introduction (page 1) to include additional literature on...

2. As suggested, we deleted Figure 1 and combined Tables 3 and 4.

3. As recommended, we reanalyzed our validity data using t-tests rather than ANOVA procedures.

4. * The reviewer is correct, and we appreciated the chance to make ourselves clearer. We have revised the paper as follows: “[Copy and paste actual manuscript changes]”

5. We appreciated/understood reviewer 3’s perspective but have retained the point because---

Use Explanatory Language

• Unfortunately, we did not collect data on variable X, so we are unable to assess its interaction effect. We added this as a limitation on page 22: “[Copy and paste actual manuscript changes]”

• Our decision to use the EPDS rather than the CES-D as our depression screening tool was informed by several factors....We have added this rationale to our methods section on page 4: “[……..]”
Don’t Get Discouraged, Be Persistent

• Reviewers’ comments are meant to enhance the quality and impact of your work.

• Your work is almost always better following revision in response to critiques.

• Persistence pays off (Odds usually improve with each revision)

• There are many, many, many journals.

• The unsubmitted paper is never published
Acceptance and Publication!

Official letter (email) of acceptance

Celebrate! Add to your CV (in press)

Assignment of copyright, other forms

Proofs are prepared (you carefully review, send corrections 24-48 hrs)

Publication (online first, print, online only)