

**NSTU**

# Подготовка материалов статей для рейтинговых журналов

March 28, 2018, 10:00 – 11:00pm

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# Content

- Publication types
- Publication structure
- Main Elements
  - Title
  - Abstract
  - Data and Methods
  - Results
  - Discussion
  - Miscellaneous
- Recommendations
- Q&A

Visualization  
and effective  
communication

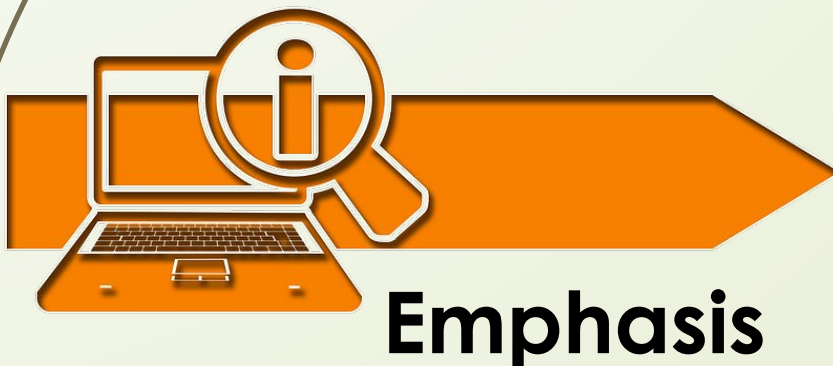
# Main Principles



**Rule 1:** A logical path, context, underlying concepts, or results should rest on solid evidence and facts.



**Rule 2:** Explanations of methods, results and concepts should consider audience level and interests.



**Rule 3:** Delivery should be user-friendly, force to note the unexpected, motivate questions, clarify statements.

# Publication types

- **Original research**
- Reviews
- Systematic review
- Meta-analysis
- Case study
- Opinion
- Perspective
- Commentary
- Letter to the Editors
- Book chapter

Different weights in different disciplines

# Publication: structure

Consider time  
commitment  
to each part!

- **Abstract.** Offer brief structured summary
- **Introduction.** Set the stage, identify significance, novelty, originality; define long-term goals and specific objectives.
- **Data and Methods.** Describe data collected and utilized in the study; describe methodology and specific techniques of data collection and analysis
- **Results.** Provide description of findings
- **Discussion and Conclusions.** Justify methodology for data collection and analysis; strengths and limitations of the study; the context and interpretation of findings.
- **Cited Literature**
- **Acknowledgements**
- **Supplementary Material**

# Publication: main elements

- **Title** - full and running titles
- **Authorship** - roles and affiliation
- **Summaries** - highlights, abstract and conclusions
- **Data** - primary and secondary data sources, ownership and agreements
- **Methods** - ownership and credits
- **Acknowledgments** - funding, ownership, credits, contributions



# Publication: main elements

- **Title** - full and running titles
- **Summaries** - highlights, abstract and conclusions
- **Introduction** - set the objectives
- **Authorship** - order and roles
- **Affiliations**

Science of the Total Environment 559 (2016) 291–301

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Science of the Total Environment

journal homepage: [www.elsevier.com/locate/scitotenv](http://www.elsevier.com/locate/scitotenv)

**Piped water consumption in Ghana: A case study of temporal and spatial patterns of clean water demand relative to alternative water sources in rural small towns**

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<sup>b</sup> Department of Community Health, Tufts University, 574 Boston Avenue, Medford, MA 02155, USA  
<sup>c</sup> Unaffiliated, P.O. Box 399, Tenase, Accra, Ghana  
<sup>d</sup> Community Water and Sanitation Agency, P.O. Box 1617, Agberidaq, Ghana  
<sup>e</sup> Friedman School of Nutrition Science and Policy, Tufts University, 150 Harrison Avenue, Boston, MA 02111, USA  
<sup>f</sup> Department of Civil and Environmental Engineering, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609, USA

**HIGHLIGHTS**

- Low water demand from piped water systems results in a low revenue stream.
- Low revenue stream presents a sustainability challenge to rural water systems.
- Water consumption from piped water systems varies temporally and spatially.
- Poor aesthetic water quality as compared to alternative sources reduces piped water use.
- Increasing improved water demand is a health and sustainability priority.

**GRAPHICAL ABSTRACT**

**ARTICLE INFO**

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**Editor:** Simon Pollard

**Keywords:**  
Rural water  
Water consumption

**ABSTRACT**

Continuous access to adequate quantities of safe water is essential for human health and socio-economic development. Piped water systems (PWSs) are an increasingly common type of water supply in rural Africa in small towns. We assessed temporal and spatial patterns in water consumption from public standpipes of four PWSs in Ghana in order to assess clean water demand relative to other available water sources. Low water consumption was evident in all study towns, which manifested temporally and spatially. Temporal variability in water consumption that is negatively correlated with rainfall is an indicator of rainwater preference when it is available. Furthermore, our findings show that standpipes in close proximity to alternative water sources such as streams and hand-dug wells suffer further reductions in water consumption. Qualitative data suggest that consumer demand in the study towns appears to be driven more by water quantity, accessibility, and perceived aesthetic water quality, as compared to microbiological water quality or price. In settings with chronic under-utilization

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# Abstract Outline

During cell division, mitotic spindles are assembled by microtubule-based motor proteins<sup>1,2</sup>. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family<sup>3</sup>. Hypotheses for bipolar spindle formation include the 'push-pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules<sup>2,4,5</sup>. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at  $\sim 20 \text{ nm s}^{-1}$  towards the plus-ends of each of the two microtubules if crosslinks. For anti-parallel microtubules, this results in relative sliding at  $\sim 40 \text{ nm s}^{-1}$ , comparable to spindle pole separation rates *in vivo*<sup>2</sup>. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding. We anticipate our assay to be a starting point for more sophisticated *in vitro* models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

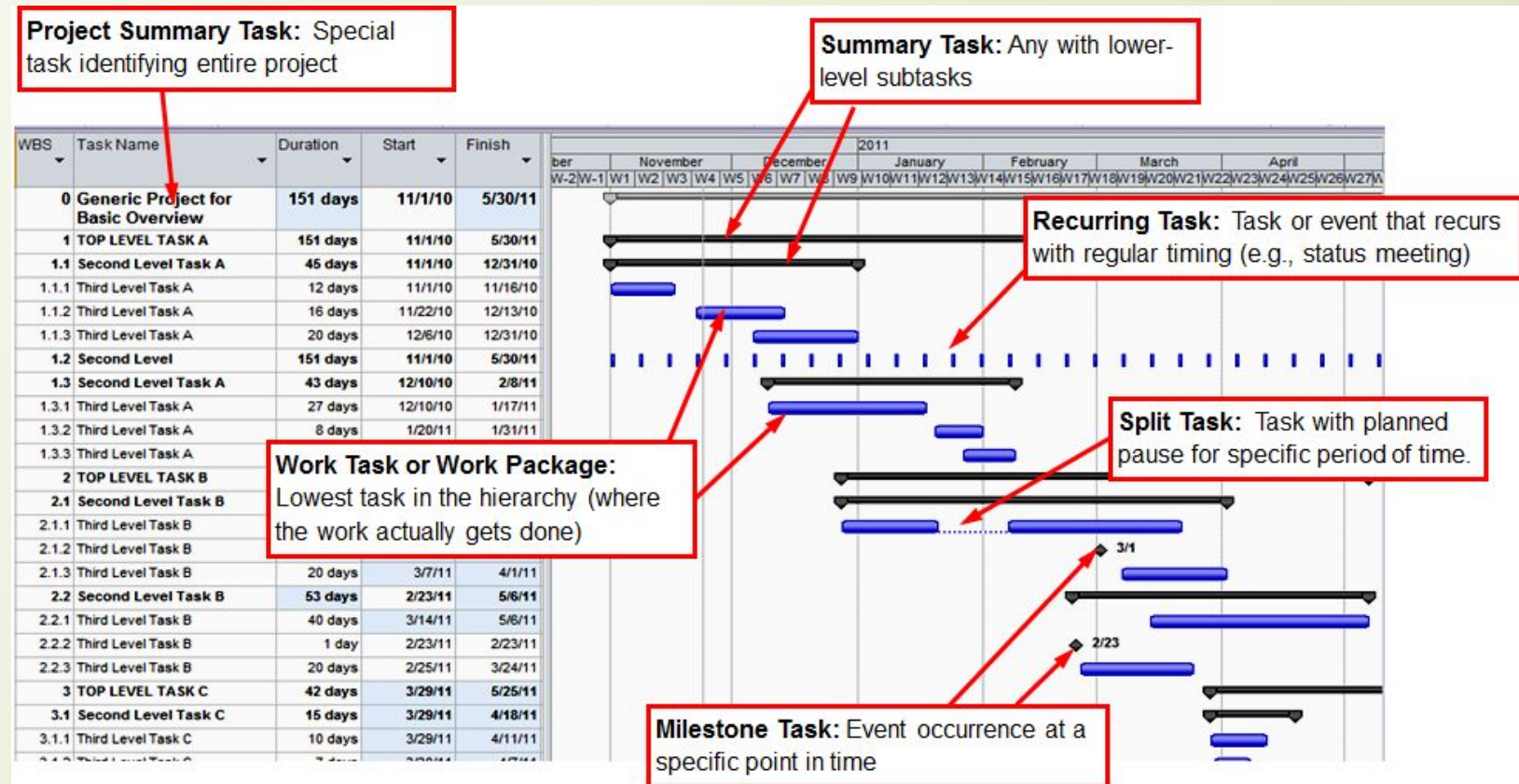
- Fields
- Disciplines
- Problem
- Study design
- Data source
- Analysis
- Results
- Conclusion



# Publication: main elements

- **Data** - primary and secondary data sources
- **Methods** - order, logic, sequence, notation

Gantt chart helps in foreseeing the possible time a project task can take and when tasks can possibly be finished.



# Publication: main elements

- **Results** - core materials
- **Supplementary Material**
- **Discussion** - order, logic, sequence study limitations and strength
- **Conclusion** - funding, ownership, credits, contributions
- **Bibliography** - limits, rationale, self-citation
- **Acknowledgments** - funding, ownership, credits, contributions

# Use of visuals in a publication

- **Abstract** - Graphical Abstract
- **Introduction** - Process flow, conceptual mapping
- **Data and methods** - Process and data flow; geographical and conceptual mapping
- **Results** - All types
- **Discussion** - All types
- **Supplemental Materials** - All types

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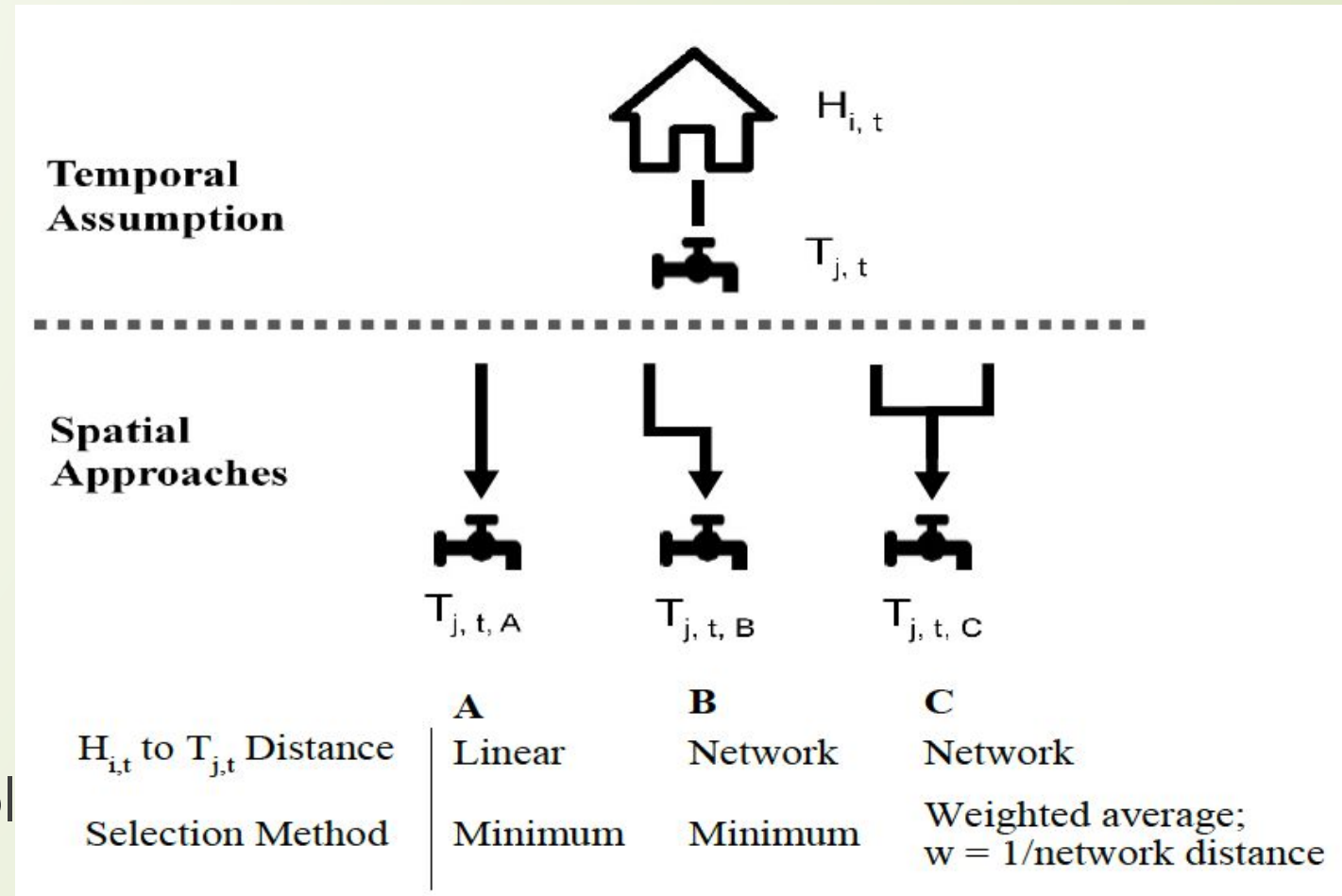
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# Schematics, Illustrations, Visuals

- Process-based
- Structure-based

- Covert a list or a table into a visual
- Simplify or clarify complex structures
- Compact information



**Figure 1.** Schematic of three spatial approaches (S: A, B, and C). Households ( $H_i$ ) and potential source taps ( $T_j$ ) are first selected based on same-day sampling ( $t$ ), and then source taps are selected based on measures of proximity (Euclidean and network distances).

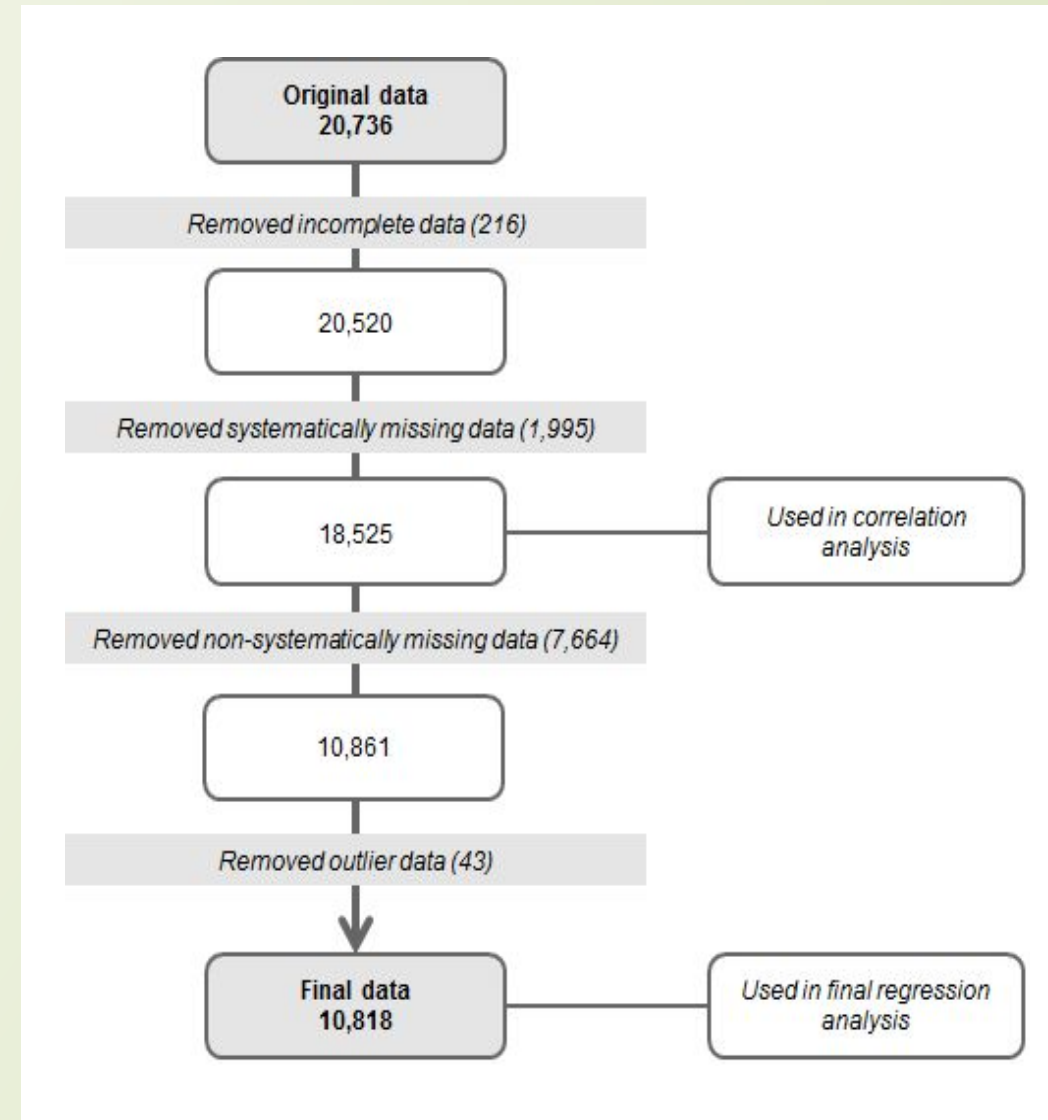


# Process-based Visuals

- **Time course and cycles**  
-sequence of steps
- **Flow charts** - sequence of steps and a decision tree
- **Gantt charts** - sequence of steps, roles and milestones

Could be

- oversimplified
- overwhelming
- confusing

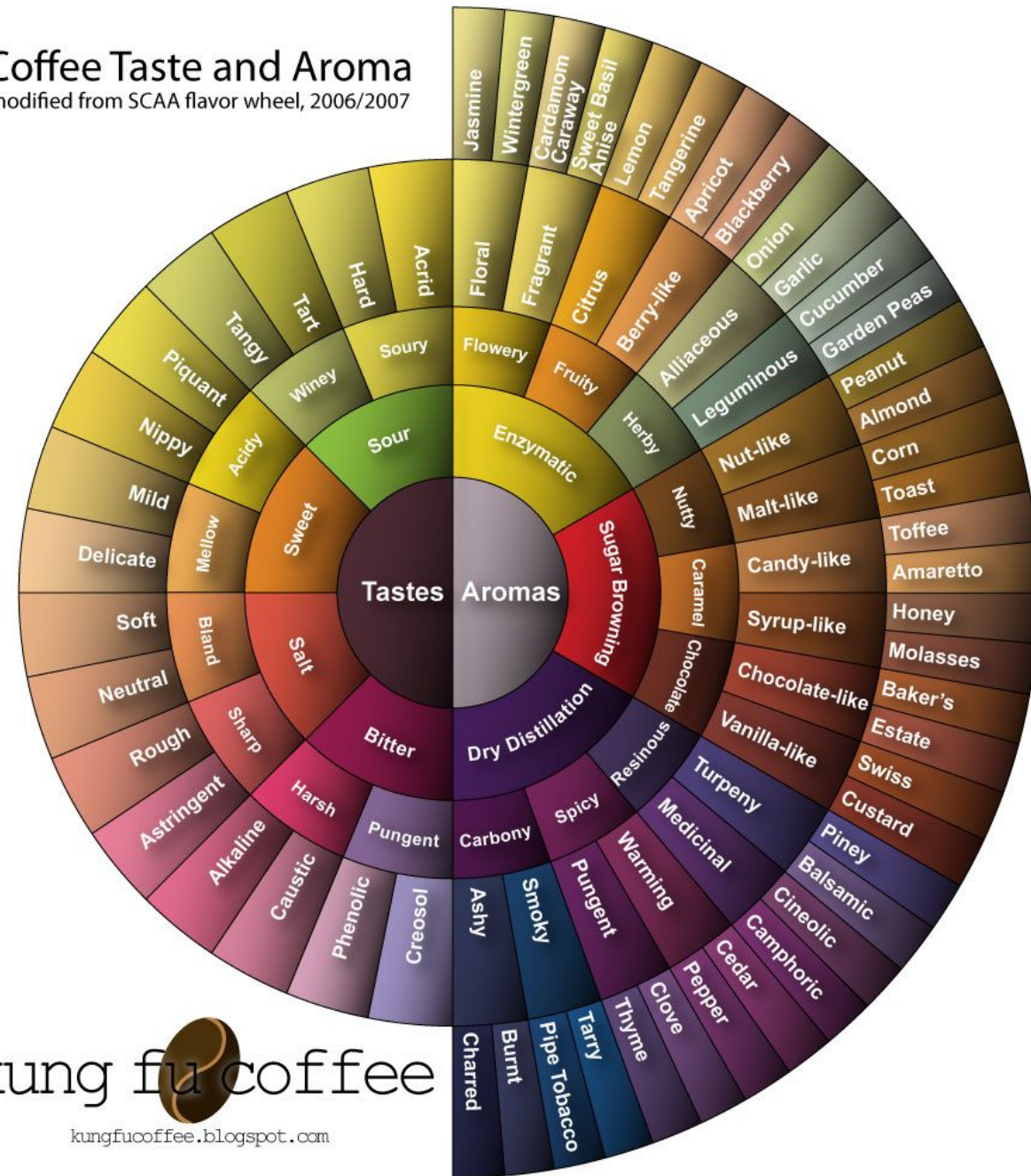


**FIG. 1** DATA PROCESSING STEPS AND SUBSEQUENT SAMPLE SIZE REDUCTION

# Structure-based Visuals

- **Hierarchy** - organization, order, relationships
- **Relationship** - properties, qualities, quantities
- **Diagrams** - sequence of steps, roles and milestones
- Covert a list or a table into a visual
- Simplify or clarify a complex structure
- Compact the volume

Coffee Taste and Aroma  
modified from SCAA flavor wheel, 2006/2007



kung fu coffee

[kungfucoffee.blogspot.com](http://kungfucoffee.blogspot.com)



# Systematization

15



PERИОДИЧЕСКАЯ СИСТЕМА ЭЛЕМЕНТОВ  
Д.И.МЕНДЕЛЕЕВА

1	H	PERИОДИЧЕСКАЯ СИСТЕМА ЭЛЕМЕНТОВ Д.И.МЕНДЕЛЕЕВА																VII	H	VIII	He
2	Li	Be				B	C	N	O	F	Ne										
3	Na	Mg				Al	Si	P	S	Cl	Ar										
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni											
5		Cu	Zn	Ga	Ge	As	Se	Br	Kr												
6	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd											
7		Ag	Cd	In	Sn	Sb	Te	I	Xe												
8		Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt										
9		Au	Hg	Tl	Pb	Bi	Po	At	Rn												
10		Fr	Ra	Ac	Ku																
LANTHANIDES																					
	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu							
ACTINIDES																					

15

## **Building process- and structure- based graphs:**

- Compilation**
- Relationship**
- Organization**
- Properties**

## **Challenges:**

- Complex**
- Take time to understand**
- Color clash**
- Small font size**

## **Advantages:**

- Big volume of data**
- Variety of data**
- Versatility**
- Teaching tool**

## **Solutions:**

- Testing for comprehension**
- Testing for perception**
- Arrangement**
- User control**



## Next steps:

- Edit, review, seek feedback
- Repeat

# Effective communications

## Friedman School Social Media Channels



@tuftsnutrition

### AUDIENCE

25-34 years old  
75% Female  
United States-based

### TONE

Collegiate  
Smart  
Friendly  
Fun  
Accessible

### CONTENT

Student Features  
Faculty Features  
Alumni Features  
Tufts Now Content  
Research/News

### FREQUENCY

3-4 Times/week



@tuftsnutrition

25-44 years old  
61% Female

Trusted Voice  
Smart  
Professional  
Knowledgeable  
Accessible

Research  
Faculty in the news  
Retweets from relevant outlets

At least 2 Times/day



bit.ly/  
FriedmanLinked

Entry level and senior researchers, Educators, Health Professionals

Professional  
Smart  
Knowledgeable  
Accessible

Alumni content  
Job postings  
Research

2 Times/week



@tufts\_nutrition

No demographics available at this time

Collegiate  
Interesting  
Informative  
Friendly  
Fun

Visually compelling photos from across the school's places, people, and programs

5 Times/week

### our services include

- We Offer:
- Brand Identity Consult
  - Posting/Content Strategy Consult
  - Campaign Design Consult
  - Channel Orientations
  - Logo/Image Resizing
  - 3 Images per Campaign (one revision)

### please keep in mind

- We Do Not:
- Provide Adobe Creative Suite tutorials
  - Create, schedule, or design campaign materials with less than 2 weeks lead time
  - Automatically approve retweet or posting requests without review
  - Post any content without permission to edit at will



Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy

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