INFSCI 3005: Introduction to Doctoral Program

Lecture 6: Reference and Search Tools

Peter Brusilovsky, Professor
School of Information Sciences and Intelligent
Systems Program, University of Pittsburgh

**With materials and inspiration from professors
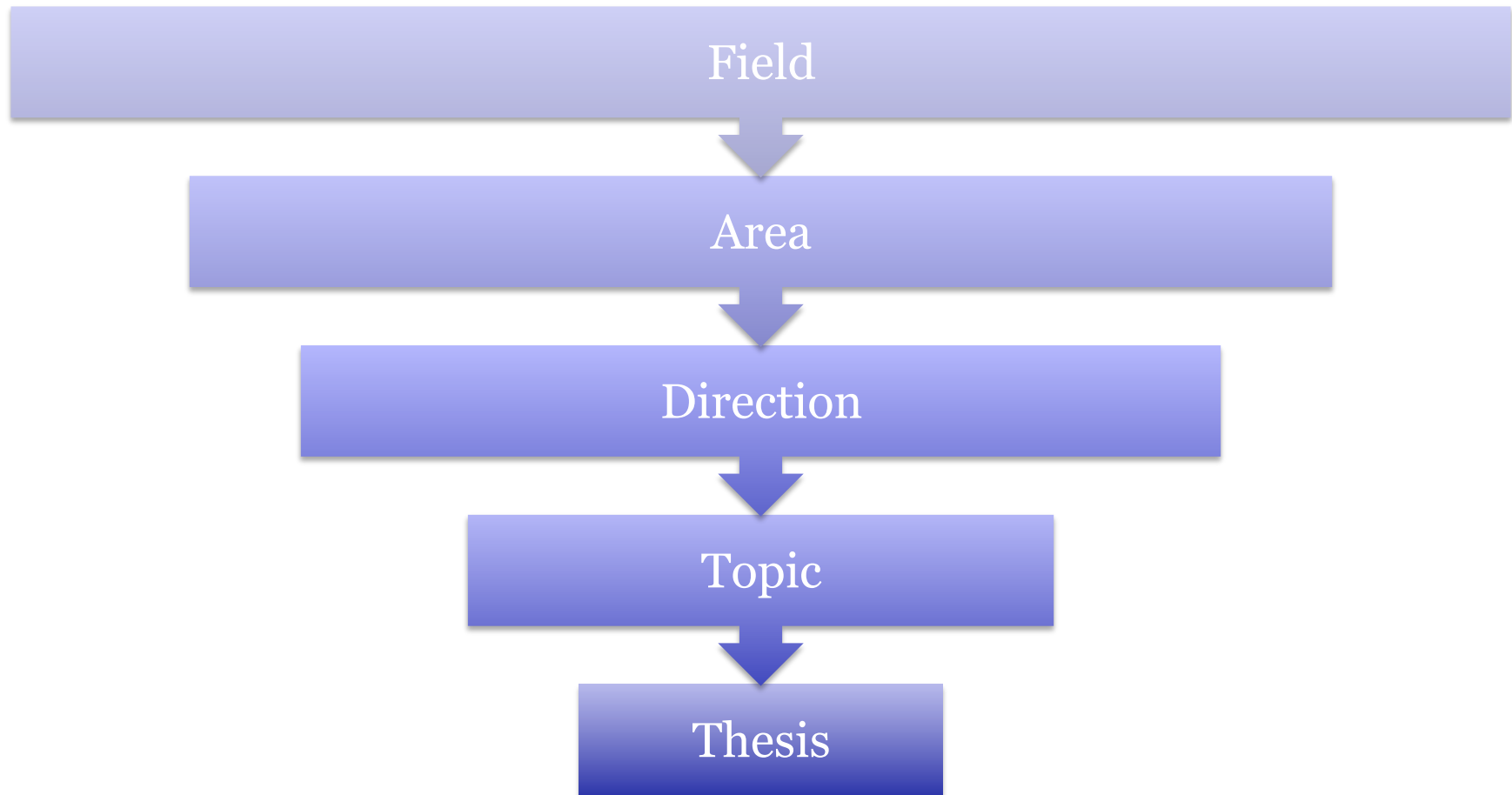Marek Druzdzel, Stephen Hirtle, and Paul Munro**

Working with research literature: When?

- To start exploring the field
- To look for research ideas and things to do
- To find similar works for a project or a paper
- To prepare review part of your thesis
- To choose next research goals

Stages of the Doctoral Study

Field

↓

Area

↓

Direction

↓

Topic

↓

Thesis

Working with research literature: Needs

- Find introductory books, textbooks

- Find research papers on a specific subject

- Find papers of a specific author or team

- Evaluate an impact of various research papers

- Organize your paper collection

- Organize your references

- Manage citations when writing a paper (thesis)

- Share references with co-authors and groups

The Library

- One of the most valuable local resources
  - SIS Library
  - Main Pitt Library
  - Carnegie Library
- Interlibrary loan
- Reserves
- Local delivery
- Search tools: http://pittcat.pitt.edu/

Digital Libraries: Search and Access

- Digital Libraries of professional societies
  - ACM: http://portal.acm.org/
  - IEEE CS: http://www.computer.org/portal/
  - IEEE: http://ieeexplore.ieee.org/
- Digital content from leading publishers
  - Springer: http://www.springerlink.com/
  - Taylor and Francis: http://www.tandfonline.com/
  - Elsevier: http://www.sciencedirect.com/
- Free access from Pitt and with VPN
  - http://www.library.pitt.edu/offcampus
  - http://technology.pitt.edu/service/secure-remote-access-connect-with-the-pulse-secure-client

Global Search Tools

- Google Search and Google Scholar
  – https://scholar.google.com/
- New Microsoft Academic Search
  – https://academic.microsoft.com/
- CiteSeerX: http://citeseerx.ist.psu.edu/
- DBLP: http://www.informatik.uni-trier.de/~ley/db/
- Semantic Scholar
  – https://www.semanticscholar.org/
- ArnetMiner
  – https://aminer.org/
- ACM Portal
  – ACM: http://portal.acm.org/

Accessing Online Sources

- No subscription at Pitt, problems with VPN?

- Google Scholar

  – https://scholar.google.com/

- Author's home page

  – http://www.pitt.edu/~peterb/papers.html

- Author's institutional repository

  – https://d-scholarship.pitt.edu/

- CiteSeerX

  – http://citeseerx.ist.psu.edu/

Social Research Portals

- Research Gate
  - https://www.researchgate.net/home
- Academia.edu
  - https://www.academia.edu/
- More than access to sources
  - Social connections (follow!)
  - Topics
  - Projects
  - Authority

Citation Indexing and Impact

- History of Abstracting/Citation indexing
- Citation tracing: Who cites whom?
- How many citations for a paper, person, journal?
- ISI Web of Science (now Thomson Reuters)
  - http://webofknowledge.com/
  - Maintains Science/Social Sciences/Humanities Citation Index
  - Allow to search for both sources and citations
  - Calculates journal *Impact Factor*
  - Requires subscription
- Elsevier Scopus: http://info.scopus.com/

Citation Tracing and Impact on Global Portals

- Google Scholar
  - https://scholar.google.com/
- Old Microsoft Academic Search
  - http://academic.research.microsoft.com/default.aspx
- New Microsoft Academic Search
  - https://academic.microsoft.com/
- Semantic Scholar
  - https://www.semanticscholar.org/
- ArnetMiner
  - https://aminer.org/
- ACM Portal
  - ACM: http://portal.acm.org/
- CiteSeerX: http://citeseerx.ist.psu.edu/

How to Assess Importance/Ranking

- Field Ranking
  - Scholar, Old Microsoft Academic Search
- H-Index
  - https://en.wikipedia.org/wiki/H-index
  - Field dependent
  - http://web.cs.ucla.edu/~palsberg/h-number.html
- How to find H-Index
  - Google Scholar
  - Various tools – better search!

Unique Identity

- One of the key problem – resolving authors identity to credit papers and citations
  - Many authors with the same name or initials (citations!)
  - Several ways to cite the same author
- Social management of identities
  - Create your profile in Google Scholar, Aminer, RG, …
  - Claim your papers!
- New Orcid framework - http://orcid.org/
  - Create your ID!
  - http://www.library.pitt.edu/orcid
  - http://orcid.org/0000-0002-1902-1464

Citation Bookmarking and Sharing

- Allows you to collect and share citations online
  - Citation scrapping when adding to database
  - Tagging for citation organization
  - Import/Export to your collection (EN & BibTeX)
  - Groups for collaborative work
  - Finding papers from people with similar interests
- Main services
  - CiteULike: http://www.citeulike.org/
  - BibSonomy: http://www.bibsonomy.org/
  - Mendeley: https://www.mendeley.com/library/

Multiple Ways to find Good Papers

- Classic search
- Identifying and following key authors
  - Impact tools and social following
- Examining top papers by topics
  - Online research portals
- Citation tracing – who cites relevant papers, what these papers cite
  - Portals with citation tracing
- Bookmark tracing – who bookmarks similar papers, what they bookmark
- Citation recommenders!
  - Google, Mendeley, CiteULike

Managing Your Citation Library

- Why? Collect, sort, update, classify, use in writing
- EndNote: http://www.endnote.com/
  - Citation management, paper processing, some collection management tools
  - Also ProCite and other tools
- BibTex
  - Universal format for citation management using LaTeX
- Online Citation Management
  - RefWorks: http://www.refworks.com/
  - EndNote Web: http://www.endnoteweb.com/
- Zotero: http://www.zotero.org/
  - Free extension that can be downloaded and installed in a browser

Online Social Citation Services

- Social Tagging systems
  - CiteULike, Bibsonomy
  - Manage and share
  - Import in EndNote, Bibtext and other formats
- Mendeley: http://www.mendeley.com/
  - Bringing it all together
  - Managing paper sources, bookmarking, collaboration, paper writing, integration with Web site

What to use?

- Books
  - Library, Amazon (used books!)
- Finding papers
  - Scholar, ACM DL, CiteULike,
- Getting papers
  - ACM DL, IEEE, Publishers, CiteSeerX, Scholar, Social portals, e-mail
- Investigating impact
  - Google Scholar, ISI, , Scopus, other portals
- Managing your citations and paper processing
  - CiteULike (Bibsonomy) with EndNote or BibTex, Mendeley