

Advice on Research and Publication in a Digital World: My Experience with MIS Quarterly

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Director, **AI Lab & AZSecure Cybersecurity** Program

MIS Department, Eller College of Management

University of Arizona & National Taiwan University (Visiting Chair Professor)


September 1, 2020

Outline

- My Disclaimers
- My Academic Background & Research Focus
- **Publication**: Publishing in Major Journals Consistently (mostly design science in MISQ)
- **Research**: Getting Major Grants Consistently (mostly applied CS research in NSF)
- Parting Thoughts & Advice

My Disclaimers:

- Disclaimer 1: It's based on my limited, personal journey & experience.
- Disclaimer 2: It's about how to **survive in b-school with consistent major journal publications (e.g., MISQ) in design science.**
- Disclaimer 3: It's about how to consistently obtain major federal grants (e.g., NSF) to support **high-impact applied computing research.**
- Disclaimer 4: Different researchers at a different time or place will have different opportunities.

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[business analytics](#) [data mining](#) [security informatics](#) [health informatics](#)

| TITLE | CITED BY | YEAR |
|---|----------|------|
| Business intelligence and analytics: From big data to big impact H Chen, RHL Chiang, VC Storey MIS quarterly, 1165-1188 | 5250 | 2012 |
| Credit rating analysis with support vector machines and neural networks: a market comparative study Z Huang, H Chen, CJ Hsu, WH Chen, S Wu Decision support systems 37 (4), 543-558 | 1099 | 2004 |
| Sentiment analysis in multiple languages: Feature selection for opinion classification in web forums A Abbasi, H Chen, A Salem ACM Transactions on Information Systems (TOIS) 26 (3), 1-34 | 1044 | 2008 |
| Applying associative retrieval techniques to alleviate the sparsity problem in collaborative filtering Z Huang, H Chen, D Zeng ACM Transactions on Information Systems (TOIS) 22 (1), 116-142 | 858 | 2004 |

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| Citations | 39953 | 18060 |
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| i10-index | 334 | 237 |

Co-authors [EDIT](#)

-  Daniel Dajun Zeng
Professor of MIS. Affiliations: Uni... >
-  Wingyan Chung
Western Carolina University >

My Background & Focus: (1) Applied Computing & Design Science

- Founded the **UA Artificial Intelligence Lab** in 1989 & **UA AZSecure Cybersecurity** Program in 2013 → need a lab or program
- Internationally renowned for leading research and development in the **health analytics** (data and text mining; health big data; DiabeticLink and SilverLink) and **security informatics** (counter terrorism and cyber security analytics; security big data; **COPLINK, Dark Web, Hacker Web, and AZSecure**) communities.
→ need focus and specialty in emerging fields



My Background & Focus: (2) Publications...

- Author of 20+ books, 300+ SCI journal articles, and 200+ refereed conference articles covering digital library, data/text/web mining, business analytics, security informatics, and health informatic → papers will come
- Overall h-index 103 (42,000+ citations for 900+ papers according to Google Scholar), among the highest in MIS and top 50 in computer science → citations will come
- Editor-in-Chief, Senior Editor or AE of major ACM/IEEE (ACM TMIS, ACM TOIS, IEEE IS, IEEE SMC), MIS (MISQ, DSS) and Springer (JASIST) journals and conference/program chair of major ACM/IEEE/MIS conferences (ICIS, IEEE ISI, ICADL, ICSH) → becoming a community leader



My Background & Focus: (3) Grants...

- Received **\$50M+ research funding from NSF**, NIH, NLM, DOD, DOJ, CIA, DHS, and other agencies (100+ grants, 50+ from NSF). Served as lead Program Director of the Smart and Connected Health (SCH) Program at the NSF for 2014-2015 → major funding helps, a lot!
- A successful IT entrepreneur; His **COPLINK/i2 system** for security analytics was commercialized in 2000 and **acquired by IBM** as its leading government analytics product in 2011. → some commercialization opportunities (**founded 7 companies**)
- Visiting Chair Professor at several major universities in China (Tsinghua University) and Taiwan (National Taiwan University); **Fellow of ACM, IEEE and AAAS** → kudos will come

Positioning in Major Journals: i-School, c-School, b-School



- i-School (\$80K) & health informatics Journals: **JASIST, ACM TOIS; JAMIA, JBI**
→ “informatics” (text) focused, system driven; helpful for NSF & NIH/NLM funding
- c-School (\$100K) Journals: **ACM TOIS, IEEE TKDE**, CACM, IEEE IS, IEEE Computer, IEEE SMC → algorithm/computing focused, data driven; helped significantly with NSF funding (same for major CS conferences)
- **b-School (\$180K) Journals: MISQ, ISR, JMIS**, MS, ACM TMIS, DSS → “design science” focused, managerial framework/principle/knowledge base; helped get jobs in major b-schools (little federal funding)

Preparing for Major Journals: The Process & Learning Curve

- Training in BS, MS, Ph.D. → needing **strong methodological (e.g., DL, NLP) and domain (e.g., cybersecurity, health) training**; needing **matching, helpful advisors/mentors** (becoming your own)
- Becoming a researcher & author → completing **“novel” research** (methodology or domain); writing from conference paper to journal paper; learning from your advisors/mentors
- Becoming a reviewer & AE → becoming a PC member; doing professional reviews; impressing senior AE/SE/EIC; publishing in target journals; networking in major conferences
- Becoming SE/EIC → Becoming a community leader; It takes time.

Major Journals: My Journey

- Training in BS, MS, Ph.D. → NCTU, U Buffalo, NYU; AI, DB, IR; Ph.D., 1985-1989 (math, statistics & computer science + English/communication/EQ)
- Becoming a researcher & author → AAI, IJMMS, IEEE SMC, JASIST, CACM, ACM TOIS; DSS, JMIS; assistant prof, 1989-1996
- Becoming a reviewer & AE → IEEE SMC, JASIST, ACM TOIS, DSS; associate/full prof, 1996-1998+
- Becoming SE/EIC → IEEE IS, ACM TMIS, MISQ; full/chair prof, 2008+

Major Journals: MISQ & JMIS

- **MISQ: A+ journal, #1 in MIS (UTD and FT listed)**
 - behavior/management focused traditionally (most SEs)
 - recent focus in business analytics & data sciences (SEs: HRR, GA, IB, PK, JP) → selecting the right SEs/AEs
 - Computational design science: application-inspired novelty (algorithm, representation, framework, HCI) + societal impact → significant content & mature writing (40+ pages)
 - MIS-specific lit review + methodology/framework/design “theory” + contribution to KB + principles (research abstraction) → right packaging
- **JMIS: A journal, #3 in MIS**
 - Same as above; more system driven
 - Zwass + Nunamaker; HICSS special issue




MISQ SEs

| | |
|-------------------------------|--|
| <u>Gediminas Adomavicius</u> | University of Minnesota |
| <u>Corey Angst</u> | University of Notre Dame |
| <u>Indranil Bardhan*</u> | University of Texas at Austin |
| <u>Wai Fong Boh</u> | Nanyang Technological University |
| <u>Andrew Burton-Jones</u> | University of Queensland |
| <u>Ron Cenfetelli</u> | University of British Columbia |
| <u>Dennis Galletta</u> | University of Pittsburgh |
| <u>Bin Gu</u> | Boston University |
| <u>Sirkka Jarvenpaa*</u> | University of Texas at Austin |
| <u>Gerald (Jerry) Kane</u> | Boston College |
| <u>Atreyi Kankanhalli</u> | National University of Singapore |
| <u>Mark Keil</u> | Georgia State University |
| <u>Prabhudev Konana</u> | University of Texas at Austin |
| <u>Xinxin Li</u> | University of Connecticut |
| <u>Likoebe Maruping</u> | Georgia State University |
| <u>Shaila Miranda</u> | University of Oklahoma |
| <u>Sunil Mithas</u> | University of South Florida |
| <u>Eivor Oborn</u> | University of Warwick |
| <u>Gal Oestreicher-Singer</u> | Tel Aviv University |
| <u>Jeffrey Parsons</u> | Memorial University of Newfoundland |
| <u>H. R. Rao</u> | University of Texas at San Antonio |
| <u>T. Kavichandran</u> | Rensselaer Polytechnic Institute |
| <u>Saonee Sarker</u> | University of Virginia |
| <u>Chee-Wee Tan</u> | Copenhagen Business School |
| <u>Jason Thatcher*</u> | Temple University |
| <u>James Y. L. Thong</u> | Hong Kong University of Science and Technology |
| <u>Amrit Tiwana</u> | University of Georgia |
| <u>Siva Viswanathan</u> | University of Maryland |
| <u>Jonathan Wareham*</u> | ESADE |
| <u>Sean Xin Xu</u> | Tsinghua University |

Chen's Publications: i-, c-, b-school, CISE

- Work hard; be persistent; colleagues & students help a lot; a little bit of luck helps



Hsinchun Chen ✎

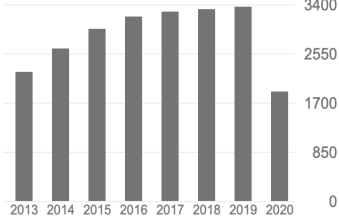
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Western Carolina University >

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| <input type="checkbox"/> Credit rating analysis with support vector machines and neural networks: a market comparative study Z Huang, H Chen, CJ Hsu, WH Chen, S Wu Decision support systems 37 (4), 543-558 | 1099 | 2004 |
| <input type="checkbox"/> Sentiment analysis in multiple languages: Feature selection for opinion classification in web forums A Abbasi, H Chen, A Salem ACM Transactions on Information Systems (TOIS) 26 (3), 1-34 | 1044 | 2008 |
| <input type="checkbox"/> Applying associative retrieval techniques to alleviate the sparsity problem in collaborative filtering Z Huang, H Chen, D Zeng ACM Transactions on Information Systems (TOIS) 22 (1), 116-142 | 858 | 2004 |

refine by venue

- Decis. Support Syst. (49)
- J. Assoc. Inf. Sci. Technol. (32)
- IEEE Intell. Syst. (20)
- J. Am. Soc. Inf. Sci. (14)
- Computer (12)
- J. Manag. Inf. Syst. (11)**
- ACM Trans. Inf. Syst. (10)
- ACM Trans. Manag. Inf. Syst. (8)
- Commun. ACM (7)
- IEEE Trans. Knowl. Data Eng. (7)
- J. Biomed. Informatics (6)
- Int. J. Hum. Comput. Stud. (6)
- IEEE Trans. Inf. Technol. Biomed. (6)
- MIS Q. (6)**
- ARIST (5)
- Inf. Syst. Frontiers (5)
- J. Inf. Sci. (3)
- Inf. Technol. Manag. (3)
- Inf. Process. Manag. (3)
- IEEE Trans. Syst. Man Cybern. Part A (3)
- IEEE Expert (2)
- 32 more options**

refine by coauthor

- Daniel Dajun Zeng (24)**
- Michael Chau (22)**
- Jay F. Nunamaker Jr. (17)**
- Ahmed Abbasi (17)**
- Gavin Yulei Zhang (17)
- Wingyan Chung (14)
- Yan Dang ⁰⁰⁰¹ (14)
- Bruce R. Schatz (13)
- Zan Huang (12)
- Robert P. Schumaker (11)
- 246 more options**

Working with Collaborator, e.g., Dr. Shu-Hsing Li, NTU, 5 Journal Papers and 4 Conference Papers, 2011-2017

Leibniz Center for Informatics
dblp
computer science bibliography

[+] Hsinchun Chen [] [] [] [] []

> Home > Persons

[-] Person information

- affiliation: University of Arizona, Tucson, USA

[+] Other persons with a similar name

[-] 2020 - today

no results

[-] 2010 - 2019

2017

[j242] [] [] [] [] Yu-Kai Lin, Hsinchun Chen, Randall A. Brown, Shu-Hsing Li, Hung-Jen Yang:
Healthcare Predictive Analytics for Risk Profiling in Chronic Care: A Bayesian Multitask Learning Approach. MIS Q. 41(2): 473-495 (2017)

2016

[c242] [] [] [] [] Lubaina Maimoon, Joshua Chuang, Hongyi Zhu, Shuo Yu, Kuo-Shiuan Peng, Rahul Prayakarao, Jie Bai, Daniel Dajun Zeng, Shu-Hsing Li, Hsin-Min Lu, Hsinchun Chen:

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s. li

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Shu-Hsing Li (12) ✓

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ICSH (4)

MISQ,
2017

SilverLink: Developing an International Smart and Connected Home Monitoring System for Senior Care. ICSH 2016: 65-77

Decis. Support Syst. (2)
IEEE Intell. Syst. (2)
Lecture Notes in Computer Science (2)
PAISI (2)
ACM Trans. Manag. Inf. Syst. (1)
MIS Q. (1)

2015

[c223] [] [] [] [] Joshua Chuang, Lubaina Maimoon, Shuo Yu, Hongyi Zhu, Casper Nybroe, Owen Hsiao, Shu-Hsing Li, Hsin-Min Lu, Hsinchun Chen:
SilverLink: Smart Home Health Monitoring for Senior Care. ICSH 2015: 3-14

[c219] [] [] [] [] Grace Samtani, Lubaina Maimoon, Joshua Chuang, Casper Nybroe, Xiao Liu, Uffe Kock Will, Shu-Hsing Li, Hsinchun Chen:
DiabeticLink: An Internationally Collaborative Cyber-Enabled Patient Empowerment Platform. ICSH 2015: 299-310

2014

[j226] [] [] [] [] Yu-Kai Lin, Hsinchun Chen, Randall A. Brown, Shu-Hsing Li, Hung-Jen Yang:
Time-to-Event Predictive Modeling for Chronic Conditions Using Electronic Health Records. IEEE Intell. Syst. 29(3): 14-20 (2014)

[c210] [] [] [] [] Joshua Chuang, Owen Hsiao, Pei-Lin Wu, Jean Chen, Xiao Liu, Haily De La Cruz, Shu-Hsing Li, Hsinchun Chen:
DiabeticLink: An Integrated and Intelligent Cyber-Enabled Health Social Platform for Diabetic Patients. ICSH 2014: 63-74

2012

[j213] [] [] [] [] Hsin-Min Lu, Feng-Tse Tsai, Hsinchun Chen, Mao-Wei Hung, Shu-Hsing Li:
Credit Rating Change Modeling Using News and Financial Ratios. ACM Trans. Manag. Inf. Syst. 3(3): 14:1-14:30 (2012)

2011

[j209] [] [] [] [] Hsinchun Chen, Michael Chau, Shu-Hsing Li:
Enterprise risk and security management: Data, text and Web mining. Decis. Support Syst. 50(4): 649-650 (2011)

[j208] [] [] [] [] Kuo-Tay Chen, Hsin-Min Lu, Tsai-Jyh Chen, Shu-Hsing Li, Jian-Shuen Lian, Hsinchun Chen:
Giving context to accounting numbers: The role of news coverage. Decis. Support Syst. 50(4): 673-679 (2011)





Major Journals: Chen, AI Lab Computational Design Science (CDS) Papers in MISQ, 2008+

A Deep Learning Approach for Recognizing Activity of Daily Living (ADL) for Senior Care: Exploiting Interaction Dependency and Temporal Patterns

Hongyi Zhu, Sagar Samtani, Randall A. Brown, and Hsinchun Chen Forthcoming, 2020

Health Analytics; Deep Learning

2020

- [j257]     Michael Chau, Tim M. H. Li, Paul W. C. Wong, Jennifer J. Xu, Paul Siu Fai Yip, Hsinchun Chen: Finding People with Emotional Distress in Online Social Media: A Design Combining Machine Learning and Rule-Based Classification. MIS Q. 44(2) (2020)

Health Analytics


[+] 2010 - 2019 

2019

- [j254]     Victor A. Benjamin, Joseph S. Valacich, Hsinchun Chen: DICE-E: A Framework for Conducting Darknet Identification, Collection, Evaluation with Ethics. MIS Q. 43(1) (2019)

Security Analytics

2017

- [j242]     Yu-Kai Lin, Hsinchun Chen, Randall A. Brown, Shu-Hsing Li, Hung-Jen Yang: Healthcare Predictive Analytics for Risk Profiling in Chronic Care: A Bayesian Multitask Learning Approach. MIS Q. 41(2): 473-495 (2017)





Health Analytics

Special Issue, Business Analytics; 5800 citations

2012

- [j214]     Hsinchun Chen, Roger H. L. Chiang, Veda C. Storey: Business Intelligence and Analytics: From Big Data to Big Impact. MIS Q. 36(4): 1165-1188 (2012)

2010

- [j178]     Ahmed Abbasi, Zhu Zhang, David Zimbra, Hsinchun Chen, Jay F. Nunamaker Jr.: Detecting Fake Websites: The Contribution of Statistical Learning Theory. MIS Q. 34(3): 435-461 (2010)

[+] 2000 - 2009  Security Analytics; Best Paper, ICIS, 2010

2008

- [j139]     Ahmed Abbasi, Hsinchun Chen: CyberGate: A Design Framework and System for Text Analysis of Computer-Mediated Communication. MIS Q. 32(4): 811-837 (2008)

Social Media Analytics

Major Journals: Health IT & Analytics Special Issue, March 2020



SPECIAL ISSUE: CHRONIC DISEASE

CONNECTING SYSTEMS, DATA, AND PEOPLE: A MULTIDISCIPLINARY RESEARCH ROADMAP FOR CHRONIC DISEASE MANAGEMENT¹

Indranil Bardhan

Department of Information, Risk and Operations Management, McCombs School of Business, The University of Texas at Austin, Austin, TX 78705 U.S.A. {indranil.bardhan@mcombs.utexas.edu}

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Elena Karahanna

MIS Department, Terry College of Business, The University of Georgia, Athens, GA 30602 U.S.A. {ekarah@uga.edu}

Special Issue: The Role of Information Systems and Analytics in Chronic Disease Prevention and Management

Special Issue Articles

Trajectories of Repeated Readmissions of Chronic Disease Patients: Risk Stratification, Profiling, and Prediction
Ofir Ben-Assuli and Rema Padman
(pp. 201-226; DOI: 10.25300/MISQ/2020/15101)

Chronic Disease Management: How IT and Analytics Create Healthcare Value Through the Temporal Displacement of Care
Steve Thompson, Jonathan Whitaker, Rajiv Kohli, and Craig Jones
(pp. 227-256; DOI: 10.25300/MISQ/2020/15085)

Go to You Tube and Call Me in the Morning: Use of Social Media for Chronic Conditions
Xiao Liu, Bin Zhang, Anjana Susarla, and Rema Padman
(pp. 257-283; DOI: 10.25300/MISQ/2020/15107)

A Data Analytics Framework for Smart Asthma Management Based on Remote Health Information Systems with Bluetooth-Enabled Personal Inhalers
Junbo Son, Patricia Flatley Brennan, and Shiyu Zhou
(pp. 285-303; DOI: 10.25300/MISQ/2020/15092)

A Comprehensive Analysis of Triggers and Risk Factors for Asthma Based on Machine Learning and Large Heterogeneous Data Sources
Wenli Zhang and Sudha Ram
(pp. 305-349; DOI: 10.25300/MISQ/2020/15106)

Examining How Chronically Ill Patients' Reactions to and Effective Use of Information Technology Can Influence How Well They Self-Manage Their Illness
Azadeh Savoli, Henri Barki, and Guy Paré
(pp. 351-389; DOI: 10.25300/MISQ/2020/15103)

The Effects of Participating in a Physician-Driven Online Health Community in Managing Chronic Disease: Evidence from Two Natural Experiments
Qianqian Ben Liu, Xiaoxiao Liu, and Xitong Guo
(pp. 391-419; DOI: 10.25300/MISQ/2020/15102)

Major Journals: MISQ CDS Common Issues

- MISQ, My Experience: no paper/involvement before 2008 (no SE in design science); Abbasi 2008 (CyberGate), 2010 (AZProtect, ICIS best paper); Guest Editor, BI&A special issue, 2010-2012 (Straub); SE 2016-2019 (Rai); Guest Editor, Health IT/Analytics special issue, 2016-2020 (Rai)
- Design Science paper common issues:
 - Where is the theory? Is this MIS? (early reviewers' critiques)
 - Few qualified/sympathetic design science SEs, AEs, reviewers. (overly critical)
 - Long review cycle (2-4 rounds/years) and uncertainty (rejection at late round).→ but
 - BI&A and data sciences are hot, in society and in b-school curriculum!
 - Young MIS CDS scholars need 1-2 MISQ/JMIS papers accepted or in deep round.
 - Mid-career MIS CDS scholars need 3-5 MISQ/JMIS papers for tenure.

Major Journals: MISQ CDS Paper Template

- Computational design science (Chen in Rai, 2017): application-inspired novelty (algorithm, representation, framework, HCI) + emerging high-impact problems
- **Significant content & mature writing (40+ pages; need 4+ years training)**
- **MIS-specific lit review (3-4 pages)** → Who/what had (been) published in MISQ/ISR/JMIS (10-20 MIS references, taxonomy, analytics relevance)
- **Methodology/framework/design “theory” (2-3 pages)** → underlying methodological foundation (not behavioral theory of +/- hypotheses), e.g., Systematic Functional Linguistic Theory, Kernel Learning Theory, etc.
- **Contribution to KB + principles (research abstraction; 2-3 pages)** → What have been learned about the design, use and general knowledge gained?
→ Carefully study sample MISQ DS papers, e.g., (Abbasi, 2008; 2010).

Major Journals: MISQ CDS Review Process

- Make sure the research fits. → Emerging **high-impact problems** + some (not a lot) **application-inspired novelty**
- **Make sure writing is mature. → Error-free! (40+ pages)**
- **Select the “right” SEs and AEs.** → Recruit and/or consult a senior experienced MISQ DS scholar.
- 1st-round review; hope for the best after 6 months. → **Getting Major Revision is good** (10+ pages of feedback is common)! Now their demands are clear!
- 1st-round revision is important; in 6 months. → Showing appreciation, respect and tangible revision actions. **Don't fight/argue! (50+ pages of response letter!)**
- 2nd/3rd/4th round review/revision → **Removing one critical reviewer at a time;** more Minor Revision and/or Accept over time
- Final decision; 2-4 years later → Eventually the SE needs to make a decision. **Everyone is tired after so many years!**

Major USA Research Funding Programs: NIH, DARPA, DHS, IARPA (Novelty + Impact)

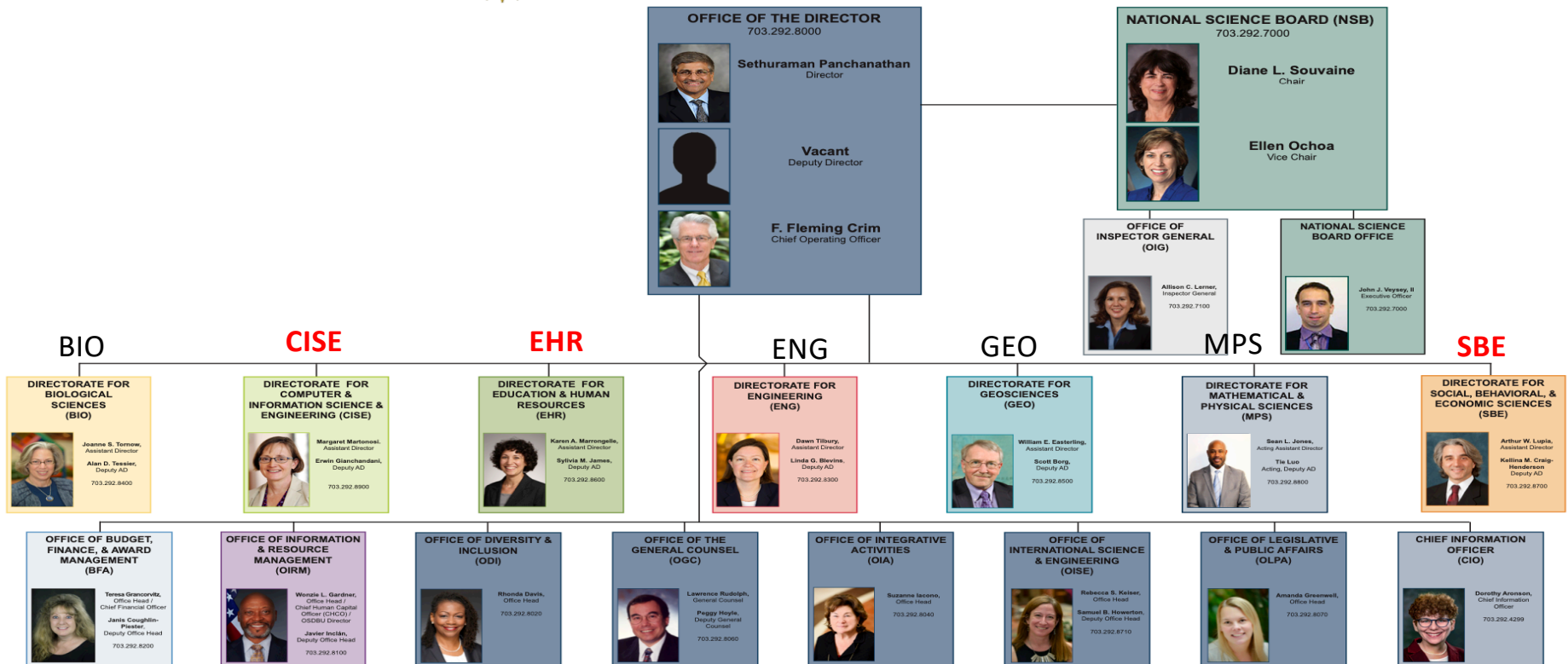


- NIH: NLM is informatics-focused; “translational” research with some application-inspired health-related novelty; need pubs and networking in AMIA/JAMIA; strong health informatics (NLM) tradition and turf (strong personality) → Chen as NLM Scientific Counselor, 2002-2006
 - DOD/DARPA: was innovative, basic/foundational, long-term (ARPA Net); now mission-critical, system-driven, short-term; commercial company (defense contractor) as prim, academic as sub; bi-monthly milestones/metrics/reporting → Chen early success with DARPA/IARPA/DHS for COPLINK/Dark Web research
 - DHS, IARPA: similar to DARPA, but aspiring; lesser scientific quality (strong personality)
- Not my focus any more! (Need to smell like them.)

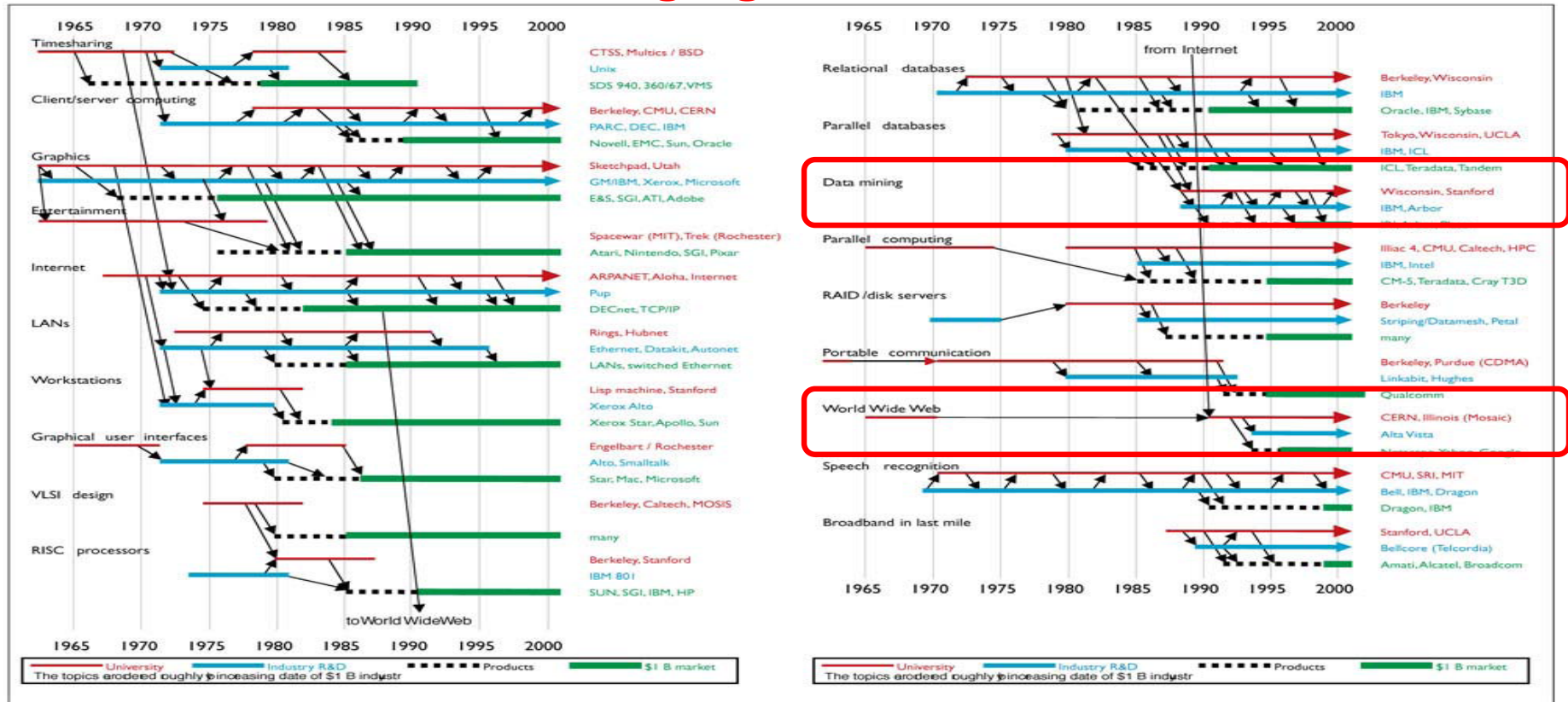
Major Grants: NSF Org Chart



NATIONAL SCIENCE FOUNDATION (\$8.3B)



Major NSF CISE Grants: IT Research Changing the World in 50 Years



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University research → Industry R&D → Products → \$1B Market (job and wealth creation)

Major Grants: NSF Proposal Observations

- **Computational Design Science (CDS)** has excellent chance for successful proposals (CISE). → in general, not so much for behavioral or economics MIS researchers (SBE; too basic, too incremental, not novel).
- **“Business” (finance, accounting, marketing) school research is not considered STEM.** → need to position for larger societal/STEM problems.
- CDS research needs to compete with CS researchers (“locusts” in emerging technical fields); deep & novel domain application for emerging societal problems could be viable. → my approach at least, for the past 30 years: digital library, intelligence, health, cybersecurity, etc.
- **Need application or domain-inspired novelty for applied cross-directorate programs.** → senior Ph.D. students; last 1-2 dissertation chapters
- A lab or center can help with sustainable advantage and funding. → developing collection, prototype system, etc.; structure & organizational memory

Major Grants: NSF The Process

- NSF Funding Criteria: **“transformational/novel” research; Intellectual Merit (IM, 60-80%) + Broader Impacts (BI, 20%-40%)**; depending on Core or Applied Program
- The Process:
 1. Select the right program and project size.
 2. **Consult experienced senior scholars.**
 3. Select emerging novel research under way (your strength; 50% done, unpublished) for a proposal.
 4. Develop the proposal (15 pages) and supporting documents (20-40 pages) in 1-2 weeks.
 5. Submit and be prepared to get rejected!
 6. Learn from the written panel reviews. Contact the Program Director (PD) to seek feedback.
 7. Repeat 1-6 for 2-3 times for the same program. Volunteer to the PD to be a panelist.
 8. **Learn from reviewing other proposals and actual panel reviews & decisions at NSF. (2 days, 8 panelists, each do 8/22 proposals)**
 9. Repeat 1-8 2-3 times until receiving grant or giving up (in 3-4 years)!

Major Grants: NSF General Advice for CDS Scholars (Publishable Research → Fundable Research)

- **Develop methodological novelty and application-specific strengths over your career.** → world-class excellence vs. other CS scholars
- **Train your Ph.D. students well.** → their last 2 dissertation chapters could be fundable; they can be trained to write proposals (scale & efficiency)
- **Build a center/lab/group.** → more sustainable and impressive (common in CS, ECE, MED)
- **Improve your grantsmanship.** → get to know your PDs and become frequent NSF panelists (getting into their heads)
- **Improve your success rate to 30% (from 5%).** → target repeating programs for re-submissions
- **Monitor and anticipate current and emerging programs.** → prepare the next proposals; repeat the cycle!

Parting Thoughts: Hard Work + A Bit of Luck

- Societal Impact > Academic Impact
 - Looking for **high-impact societal problems (NYT, WSJ, The Economist)**
- IT > MIS
 - MIS is a smaller subfield within broader IT/computing.
- CISE > SBE
 - Computational Design Science can make a difference.
- New > Old
 - Looking for **new, interesting, unknown problems**
- **EQ > IQ**
 - **Hard work, discipline, aspiration, time management, team player, etc. always beat raw talent. Plus a bit of luck!**

For more information (resources & papers): <http://AI.Arizona.edu>



ARTIFICIAL INTELLIGENCE LABORATORY

Research

CICI: Cyber Threat Intelligence for Cyberinfrastructure

SaTC: Big Data Research for Hacker Communities

SFS: AZSecure Cybersecurity Program

Business Intelligence and Analytics

The Artificial Intelligence Laboratory conducts sophisticated information systems research and has made significant contributions in machine learning, visualization, knowledge management and many other areas.

Current Research Projects

Cybersecurity Research and Education

NSF CICI: Cyber Threat Intelligence for Cyberinfrastructure – 2019 - 2022

This project brings together a unique and diverse team of researchers from UArizona and Indiana University in order to discover and mitigate the vulnerabilities present in scientific instruments, cyberinfrastructure, and scientific assets.

NSF SaTC: Big Data Research for Hacker Communities – 2019 - 2022

This project seeks to shed light on the nature of cybercrime in dark web communities by advancing current capabilities for scalable identification, collection, and analysis of international hacker community contents, as well as developing new big data techniques that enables further analysis on hacker content and other related domains.

NSF SFS: Scholarship for Service – 2013 - 2024

