Dossier
Tim Menzies
2019-2020

Department of Computer Science
North Carolina State University
email: tjmenzie@csc.ncsu.edu;
URL: http://menzies.us

(Note: All new material for the most recent year is highlighted **like this.)**

NORTH CAROLINA STATE UNIVERSITY
STATEMENT OF FACULTY RESPONSIBILITIES

MENZIES, TIMOTHY JAMES

Realms of Responsibility

Teaching and Mentoring of Undergraduate and Graduate Students — 45%

Approximate effort to be devoted to this realm of responsibility: 45%

Dr. Menzies will commit to quality teaching consistent with the mission of the University and of the Department of Computer Science.

Dr. Menzies is expected to each three courses per year, in the areas of undergrad and graduate SE (or related CS subjects). Also, to serve on graduate committees for graduate exams for graduate degrees via research.

Discovery of Knowledge through Discipline-Guided Inquiry — 45%

Approximate effort to be devoted to this realm of responsibility: 45%

Dr. Menzies will commit to quality research consistent with the mission of the University, of the Department of Computer Science.

Dr. Menzies will continue to maintain an externally funded research program in the area of software engineering and to disseminate original contributions to the fieldworker through peer-reviewed journals or other means appropriate to the discipline.

Service in Professional Societies and within the University — 10%

Approximate percent effort to be devoted to this realm of responsibility: 10%.

Dr Menzies will contribute to the programs and governance of the University, theCollege of Engineering, and the Computer Science Department as requested or desired.

Dr, Menzies will commit to quality efforts in proving service to professional societies and other organizations outside of the University as appropriate to his disciplinary area and professional interests.

Performance Standards

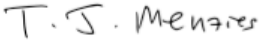
This document summarizes the percent effort expected within each realm of responsibility appropriate to Timothy James Menzies. Fulfilling the responsibilities defined above is necessary but not sufficient for reappointment, promotion, conferral of tenure, or post-tenure review. Timothy James Menzies is expected to meet and strive to exceed performance standards in each of the above realms of responsibility and to an extent commensurate with the percent effort indicated.

Reappointment, promotion, and tenure performance standards are documented in the Department of Computer Science Reappointment, Promotion and Tenure (RPT) Standards and Procedures Rule [RUL 05.67.302], the College of Engineering RPT Standards and Procedures Rule [RUL 05.67.308], and relevant University policies and regulations [POL 05.20.01]. Post-tenure review performance standards for tenured faculty are documented in the Department of Computer Science Post Tenure Review (PTR) Standards and Procedures Rule [RUL 05.68.31], the College of Engineering PTR Standards and Procedures Rule [RUL 05.68.80], and relevant University policies and regulations [REG 05.20.04].

It is the responsibility of the department head(s) to ensure that appropriate performance standards are available for all of their faculty members. It is the responsibility of the faculty member and departmental voting faculty to review all applicable standards.

Signatories

Timothy James Menzies
Professor



Signature — Date: **Jan 27, 2020**

Gregg Evan Rothermel
Department Head

Signature — Date

BRIEF RESUME

1. Education background:

- Ph.D., CS, University of New South Wales, 1995 *Generalized Testing of Knowledge Bases*; Advisor Paul Compton
- Masters of Cognitive Science, University of New South Wales, Australia, 1988
- B.S. Computer Science, University of New South Wales, 1985.

2. Professional experience:

- August 2014 to present: Professor, CS, North Carolina State University, Raleigh, NC
- May 2012 to August 2014: Professor, West Virginia University, Morgantown, WV
- February 2006 to April 2012, Associate Professor, West Virginia University, Morgantown, WV
- December 2001 to December 2003, SE research chair, NASA IV&V Facility, West Virginia
- July 2000 to January 2001: Assistant professor, University of British Columbia, Vancouver, CA

3.Scholarly and creative activities:

Books	*Career*	*Post Tenure*	*Current Year*
Edited books and Proceedings	4	4	0
Refereed book chapters	13	3	0

Papers, Articles, Patents, Reports, etc.	*Career*	*Post Tenure*	*Current Year*
Refereed journal articles	86	57	8
Refereed magazine articles	18	9	2
Other magazine articles	-	-	-
Refereed conference papers	129	68	5
Refereed workshop papers	70	15	0
Refereed panel papers	-	-	-
Refereed posters/fast abstract	-	-	-
Technical reports	4	-	0
Refereed tutorials	4	4	0
Course pack (with ISBN)	-	-	-
News interviews	4	2	-

Talks, Presentations	*Career*	*Post Tenure*	*Current Year*
Keynotes and distinguished speaker	10	10	2
Other invited talks	12	12	2

Funded Research, Development and Teaching	*Career*	*Post Tenure*	*Current Year*
Contracts and Grants	$11,685,872	$9,825,911	$2,775,000
Gifts (cash)	$850,000	$850,000	$170,000
Gifts (in kind)	-	-	-
Other: PhD Fellowships	-	-	-

Mentoring and Supervision (see CV for details)	*Career*	*Post Tenure*	*Current Year*
PhD (chair/co-chair), graduated	12	12	4
PhD (chair/co-chair), current	-	12	12
MS (chair/co-chair), graduated	32	7	
MS (chair/co-chair), current	-	-	
Undergraduate advisees, graduated	7	5	
Faculty mentored	12	12	4

Courses taught	*Career*	*Post Tenure*	*Current Year*
Regular undergraduate (3 credits, 10< x < 100 students)	10	3	1
Large undergraduate (3 credits, x > 100 students)	5	-	-
Regular graduate (3 credits, 10 < x < 100 students)	37	26	1

Courses created and/or revised in a significant way	*Career*	*Post Tenure*	*Current Year*
Undergraduate	5	3	0
Graduate	8	5	0

Other	*Career*	*Post Tenure*	*Current Year*
Development of Software Packages	5	2	10
Creation/Direction of Dept. Facilities – Labs & Centers	6	4	3
Major awards and recognitions	12	11	2
Major off-campus services	15	10	4

4. Membership in professional organizations:

- Association for Computing Machinery (ACM), 1996-present
- Institute of Electrical and Electronic Engineers (IEEE), 1997-present
- Promotion to IEEE senior member in 2017
- Elevated to IEEE Fellow, 2019.

5. Scholarly and professional honors:

1. **ACM Sigsoft Distinguished paper award, ICSE'19, "iSENSE: Completion-Aware Crowdtesting Management"**
2. **Most Influential Paper Award (from ICSM 2009) "On the use of Relevance Feedback in IR-based Concept Location"**
3. ACM TOSEM journal distinguished reviewer 2011-2018 (only person to receive that award for all those years)
4. Journal of Software & Systems : best reviewers for 2018 (only 12 such people selected).
5. Inaugural Mining Software Repositories Foundational Contribution Award., 2017
6. Carol Miller Graduate Lecturer Award, Association for Computing Machinery/Association of Information Technology Professionals, 2016
7. Distinguished reviewer, ACM Transactions on Software Engineering Methodologies, 2016
8. Outstanding reviewer award, journal of Information and Software Technology, 2016
9. Service award from Big Data community: Lexis Nexis, 2015
10. Distinguished reviewer, ACM Transactions on SE Methodologies, 2015
11. WVU College of Engineering, Outstanding Researcher, 2010
12. NASA Commendation for Chief of Mission Assurance, 2004

6. Professional service on campus:

- Proxy to the chair at college meetings
- Chair, faculty search committee
- Member, departmental graduate review committee
- NC State Member , CSC Faculty Search (2015, 2016,2017)
- Curating the PROMISE repository of SE data. That work recently won me the inaugural Mining Software Repositories Foundational Contribution Award. See http://2017.msrconf.org/#/awards
- NC State Member , Software Engineering Faculty Search (2014)
- NC State, Open house weekend (March 2015)
- ßßWVU, computer science, Promotion & Tenure committee (2010-2014)
- WVU, Member, Faculty Search Committees (2010-2013)
- Director, National Archives/WVU project (2009-2011)
- Director, WVU/NASA Research Collaboration (2002-2009)

7. Professional service off campus (see CV for complete list):

- Artifacts co-chair, **ICSE'20**
- ROSE FESTIVAL ORAGANIZER, FSE'18, ICSE'19**,ICSE'20**
- **Co-PC PROMISE'20**
- PC-chair RAISE'19
- Artifacts chair, FSE'18
- Co-PC chair, SSBSE'17
- Co-chair, SWAN'17
- Co-General Chair: International Conference on Software Maintenance and Evolution 2016
- Co-Program Chair: SSBSE'17, ICSE NIER'15, ASE'12.
- Editorial board: ACM Transactions on Software Engineering **(**
- **Associated Editor: Information Software Technology**
- Editorial Board: Software Quality Journal
- Editorial Board: Big Data Research Journal.
- Chair, IEEE Software editor review board, 2016
- Associate Editor: IEEE Transactions on Software Engineering 2011-2017.
- Editorial Board: Empirical Software Engineering International Journal, 2009-present; Automated Software Engineering Journal, 2010-present
- Steering Committee Member:
  •.IEEE Automated Software Engineering (2012-present)
  •. PROMISE conference 2005-2012.
- PC member: **ASE'20, ESEM'20, ICSE20**, MSR/19, FSE'19, ICSE'20 ICSE,18, IEEE

- Distingusihed paper committee: **MSR'20**
- **IEEE Fellow award committee (2020)**
- **Msr award commitee 2018**, SSBSE'18, ESEM 2018 , SoftwareMining'17, ICSE'17 (artifacts), PROMISE'18, MSR'18, ESEM'18, SPLC'17, EASE'17 ASE'16, BIGDSE'16, EASE 2016, ESEM2016, ICSE-SRC 2016, ISSRE 2016, PROMISE 2016, RAISE 2016, SCORE 2016, Icse'15, Ase'15, BigDSE'15, Ease'15, EsPreSSE'15, Esem'15, Fse'15, Gecco'15, Icpc'15, Issre'15, Msr'15, NasBase'15, Promise'15, Raise'15, Ssbse'15; Previously: MSR'14, ICSE14-demos, ICSE14-mainConference, DAPSE'14, EASE'14, GTSE'14, SAM 2014, SEAA 2014, MSR (2011-2014). ASE (2002-20114), ESEM (2011-2013) • SAM2103, DAPSE'13, ICSE'13: demos ,ASE-Tools'13 , ISSRE'13, GTSE'13, MALIR'13 , Software Mining -2012, 2013 , ISSRE'09, ISSRE'10 and many more dating back to 1991.

II. TEACHING AND MENTORING OF UNDERGRADUATE AND GRADUATE STUDENTS

A. TEACHING EFFECTIVENESS

Term	Fall	Sprg
Year	2019	2019
Course	CSC 591 021	CSC 417 001
Courses	CSC 591 021, CSC 791 021	CSC 417 001
Title	SP Topic CSC	Theory Prog Lang
Responses	33	9
Enrolled	58	38
Response Rate	56.90%	23.68%

Column1	Colu	Colu	C	Column5	Colu	Colu		Colum
	Mean	SEM	N	Dept Mean	Mean	SEM	N	Dept Mean
1. Teaching aligned with the courses learning objectives/outcomes	4.5	0.12	33	0.0	3.9	0.35	9	4.4
2. The instructor was receptive to students outside the classroom	4.7	0.08	33	0.0	4.3	0.24	9	4.2
3. The instructor explained material well.	4.6	0.10	33	0.0	4.0	0.37	9	4.0
4. The instructor was enthusiastic about teaching the course	4.8	0.06	33	0.0	4.8	0.15	9	4.4
5. The instructor was prepared for class	4.7	0.14	33	0.0	4.1	0.42	9	4.4
6. The instructor gave useful feedback.	4.5	0.15	33	0.0	4.0	0.41	9	4.0
7. The instructor consistently treated students with respect	4.8	0.07	33	0.0	4.3	0.24	9	4.4
8. Overall, the instructor was an effective teacher	4.6	0.11	33	0.0	3.7	0.33	9	4.1
9. The course materials were valuable aids to learning	4.3	0.18	33	0.0	3.7	0.37	9	4.1
10. The course assignments were valuable aids to learning	4.4	0.16	33	0.0	3.7	0.37	9	4.1
11. This course improved my knowledge of the subject	4.4	0.16	33	0.0	4.2	0.22	9	4.3
12. Overall, this course was excellent	4.4	0.16	33	0.0	3.7	0.37	9	3.9

Term	Fall	Sprg
Year	2018	2018
Course	CSC 591 023	CSC 510 001
Courses	CSC 591 023, CSC 791 023	CSC 510 001
Title	SP Topic CSC	Software Engineerg
Responses	14	35
Enrolled	23	68
Response Rate	60.87%	51.47%

Column1	Mea	SEM	N	Dept Mea	Mea	SEM	I	Dept M
1. Teaching aligned with the courses learning objectives/outcomes	4.2	0.32	14	0.0	3.7	0.19	35	4.3
2. The instructor was receptive to students outside the classroom	4.4	0.25	14	0.0	4.0	0.19	35	4.3
3. The instructor explained material well.	4.2	0.19	14	0.0	3.6	0.21	35	4.0
4. The instructor was enthusiastic about teaching the course	4.4	0.31	14	0.0	4.2	0.19	35	4.4
5. The instructor was prepared for class	4.2	0.24	14	0.0	3.9	0.19	35	4.3
6. The instructor gave useful feedback.	4.2	0.19	14	0.0	3.9	0.19	33	4.1
7. The instructor consistently treated students with respect	4.4	0.25	14	0.0	3.9	0.20	35	4.4
8. Overall, the instructor was an effective teacher	4.3	0.30	14	0.0	3.8	0.18	35	4.1
9. The course materials were valuable aids to learning	4.1	0.29	14	0.0	3.7	0.21	34	4.1
10. The course assignments were valuable aids to learning	4.1	0.29	14	0.0	3.9	0.21	34	4.2
11. This course improved my knowledge of the subject	4.2	0.30	14	0.0	3.8	0.22	34	4.3
12. Overall, this course was excellent	4.3	0.32	14	0.0	3.6	0.22	34	4.1

Term	Sprg	Fall
Year	2018	2017
Course	CSC 495 002	CSC 591 023
Courses	CSC 495 002	CSC 591 023, CSC 791 023
Title	SP Top Comp Sci	SP Topic CSC
Responses	15	13
Enrolled	43	25
Response Rate	34.88%	52.00%

Column1	Mea	SEM	N	Dept Mea	Mea	SEM	I	Dept I
1. Teaching aligned with the courses learning objectives/outcomes	2.9	0.35	15	4.4	4.5	0.18	13	0.0
2. The instructor was receptive to students outside the classroom	3.3	0.30	15	4.2	4.6	0.14	13	0.0
3. The instructor explained material well.	3.0	0.34	15	4.1	4.2	0.30	13	0.0
4. The instructor was enthusiastic about teaching the course	4.5	0.13	15	4.4	4.9	0.08	13	0.0
5. The instructor was prepared for class	3.2	0.37	15	4.4	4.5	0.18	13	0.0
6. The instructor gave useful feedback.	2.7	0.38	15	4.1	4.5	0.20	12	0.0
7. The instructor consistently treated students with respect	3.0	0.39	15	4.4	4.4	0.24	13	0.0
8. Overall, the instructor was an effective teacher	3.0	0.28	15	4.2	4.3	0.19	12	0.0
9. The course materials were valuable aids to learning	3.2	0.34	15	4.1	4.2	0.20	13	0.0
10. The course assignments were valuable aids to learning	3.5	0.29	15	4.2	4.4	0.18	13	0.0
11. This course improved my knowledge of the subject	3.5	0.31	15	4.3	4.5	0.18	13	0.0
12. Overall, this course was excellent	2.9	0.30	15	4.0	4.2	0.20	13	0.0

Term	Sprg	Fall
Year	2017	2016
Course	CSC 510 001	CSC 591 007
Courses	CSC 510 001	
Title	Software Engineerg	SP Topic CSC
Responses	21	36
Enrolled	33	38
Response Rate	63.64%	94.74%

Column1	Mea	SEM	N	Dept Mea	Mea	SEM	I	Dept I
1. Teaching aligned with the courses learning objectives/outcomes	4.1	0.19	21	4.2	4.3	0.12	36	4.3
2. The instructor was receptive to students outside the classroom	4.5	0.17	20	4.3	4.5	0.09	36	4.3
3. The instructor explained material well.	4.1	0.19	21	3.9	4.1	0.17	36	4.0
4. The instructor was enthusiastic about teaching the course	4.9	0.07	21	4.2	4.7	0.09	36	4.4
5. The instructor was prepared for class	4.2	0.21	21	4.2	4.4	0.12	36	4.3
6. The instructor gave useful feedback.	4.4	0.19	21	4.0	4.3	0.13	36	4.1
7. The instructor consistently treated students with respect	4.8	0.09	21	4.4	4.6	0.09	36	4.5
8. Overall, the instructor was an effective teacher	4.3	0.17	21	4.0	4.1	0.15	36	4.1
9. The course materials were valuable aids to learning	4.0	0.23	21	4.1	4.2	0.15	35	4.2
10. The course assignments were valuable aids to learning	4.1	0.27	21	4.2	4.3	0.14	35	4.3
11. This course improved my knowledge of the subject	4.0	0.24	21	4.2	4.3	0.15	35	4.3
12. Overall, this course was excellent	4.1	0.23	21	4.0	4.2	0.14	35	4.1

Term	Fall				Sprg				
Year	2016				2016				
Course	CSC	591	006		CSC	510	001		
Courses									
Title	SP Topic CSC				Software Engineerg				
Responses	8				40				
Enrolled	12				57				
Response Rate	66.67%				70.18%				

Column1	Mea	SEM	N	Dept Mea	Mea	SEM	I	Dept I
1. Teaching aligned with the courses learning objectives/outcomes	4.5	0.27	8	4.3	4.3	0.13	40	4.3
2. The instructor was receptive to students outside the classroom	4.6	0.18	8	4.3	4.4	0.12	40	4.3
3. The instructor explained material well.	4.6	0.18	8	4.0	4.4	0.11	40	3.9
4. The instructor was enthusiastic about teaching the course	4.8	0.16	8	4.4	4.7	0.08	39	4.4
5. The instructor was prepared for class	4.6	0.18	8	4.3	4.5	0.10	39	4.2
6. The instructor gave useful feedback.	4.8	0.16	8	4.1	4.4	0.11	40	4.1
7. The instructor consistently treated students with respect	4.8	0.16	8	4.5	4.4	0.14	39	4.5
8. Overall, the instructor was an effective teacher	4.8	0.16	8	4.1	4.4	0.11	40	4.1
9. The course materials were valuable aids to learning	4.4	0.26	8	4.2	4.3	0.12	40	4.1
10. The course assignments were valuable aids to learning	4.8	0.16	8	4.3	4.4	0.13	40	4.2
11. This course improved my knowledge of the subject	4.6	0.18	8	4.3	4.4	0.11	40	4.3
12. Overall, this course was excellent	4.8	0.16	8	4.1	4.4	0.12	40	4.0

Term	Sprg				Fall				
Year	2015				2014				
Course	CSC	510	001		CSC	791	001		
Courses	CSC 510 001				CSC 791 001				
Title	Software Engineerg				Advanced Topics In				
Responses	25				4				
Enrolled	32				5				
Response Rate	78.13%				80.00%				

Column1	Mea	SEM	N	Dept Mea	Mea	SEM	I	Dept I
1. Teaching aligned with the courses learning objectives/outcomes	4.2	0.12	25	4.4	4.8	0.25	4	4.3
2. The instructor was receptive to students outside the classroom	4.6	0.10	25	4.3	5.0	0.00	4	4.3
3. The instructor explained material well.	4.2	0.16	25	4.2	5.0	0.00	4	3.9
4. The instructor was enthusiastic about teaching the course	4.8	0.08	25	4.4	5.0	0.00	4	4.3
5. The instructor was prepared for class	4.4	0.13	25	4.4	5.0	0.00	4	4.2
6. The instructor gave useful feedback.	4.4	0.13	25	4.2	5.0	0.00	4	4.1
7. The instructor consistently treated students with respect	4.6	0.17	25	4.5	5.0	0.00	4	4.5
8. Overall, the instructor was an effective teacher	4.4	0.13	25	4.3	5.0	0.00	4	4.0
9. The course materials were valuable aids to learning	4.2	0.15	23	4.2	5.0	0.00	4	4.1
10. The course assignments were valuable aids to learning	4.1	0.15	25	4.3	5.0	0.00	4	4.2
11. This course improved my knowledge of the subject	4.3	0.14	25	4.4	5.0	0.00	4	4.3
12. Overall, this course was excellent	4.3	0.14	25	4.2	5.0	0.00	4	4.0

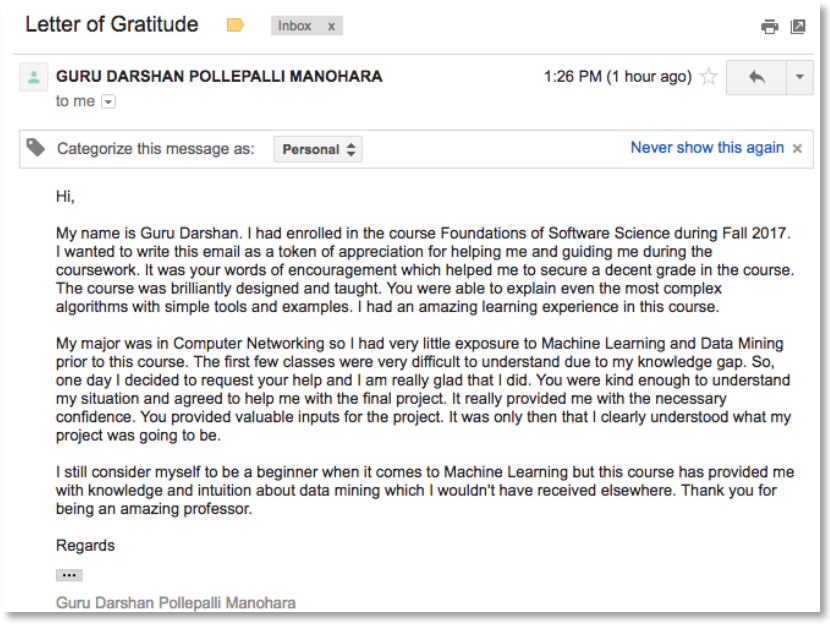
Student comments:

- **CSC510 (Fall2019):**
  - **Makes us understand (concepts) in depth. He is very receptive outside the class and very respectable. One of the best professor's I have met during college. … Dr Tim is awesome!... The greatest professor in Computer Science during my time at NC State. Is very fun to see in the class …. His passion comes through in every aspect of the class, and he's a great instructor. … You're not punished for learning at a slower pace or for being unable to complete one week's homework when it's initially due. I think assignments like these are how almost every course should treat assignments…. He cared about us learning rather than just doing the usual "learn enough to get marks"…. The homework assignments were more less crash course for python and debugging tasks which involved converting written code from 1 language to the other.**

- **CSC417 (Spring 2019):**
  - ***(Note from Dr Menzies: The subject is improving. The scores for this subject were much better than Spring 2018. The feedback below (both positive and negative) will guide further improvements for 2020.)***
  - **POSITIVE: Great hands on work with languages. ….The professor is clearly very knowledgeable and enthusiastic about this material, and I like him a lot. …. Strength: Teacher knew what he was talking about. He had powerful examples. He gave work that he thought would be helpful Weakness: The work given was so abstract that it was hard to understand everything that was happening. … Dr. Menzies clearly is passionate about programming language . I liked how lectures were structured and the material that was discussed during the lecture. Always available for students …… The large end projects were very fun. I liked having small projects in the beginning that were directed to a specific language, which forced us to learn lisp and Smalltalk, then we got to choose what to do for the final project. … It was good to have modularity so we could test the output of our selected program….**
  - **NEGATIVE: His way of programming and giving assignments is so arbitrary it was hard to understand and follow. … I would never take this course again or anything like it if taught by the same professor but I am glad that I took this course. I did like how the final project was structured as well: choose your language, choose your patterns, choose which section of the pipeline. Change the order of what is introduced to ease students into your expectations with things they should have knowledge about. … Simpler assignments, clearer instructions, more coherent lectures.**
- CSC510 (Fall 2018) :
  - Dr. Menzies's class is very interesting. Overall, fantastic pace of the course and materials covered. … Overall, a fantastic course. … A fantastic instructor. … Dr Menzies is the most engaging lecturer I have had to date. He brings levity in his lectures. … Formed his lessons around easy to understand narratives and intuition. …. I feel that the course does a good job of instilling a healthy, scientific scepticism when evaluating AI, and imparts tools with which to evaluate AI. … My suggestion would be to add a homework where folks set up a small experiment to learn how to build a pipeline that has validation and produces evaluation metrics.
- CSC 495 (Spring 2018):
  - *(Note from Dr Menzies: The scores for this subject were low. Reason: this was the first ugrad subject I had taught since 2014 and I just got too ambitious. I'm teaching the subject in Spring 2019 and this time I am doing much smaller, much more defined, assignments).*
  - He loves the course, is enthusiastic about it, and knows a ton about it, but he needs to slow down and collect the amazing thoughts in his head because he has trouble conveying them clearly. … I learned a lot about a variety of different programming languages which has broadened my view of Computer Science in general. The set up of the course itself was disorganized. I think this is partly the fault of the professor for not setting up a comprehensive syllabus, but also because this was a brand new class this semester. …He is enthusiastic about teaching, but I feel he didn't achieve the goals of the course to me. … Tim is incredibly enthusiastic about the course, but he can't coherently assemble his thoughts to get out a good lecture. It's so obvious that he knows so much and has so many great ideas, but he just rambles for most of the lecture. If he really organized one topic per lecture and created a coherent "story-line", it'd be soooo much better. … The materials were similar to his lectures - a non-focused stream of thoughts and examples. Smaller and more focused examples would have made a huge difference. Doing a github for the course was wonderful, but the materials inside could've been cleaned up a lot. … Most of the examples are so abstract and Dr. Menzies jumps from one thing to another so quickly it can be very easy to get lost. … I think the due dates should have been more rigid so we don't have assignments due on exam week. … the project assignment itself was

also lacking in detail. This made it very difficult to provide the type of result that the professor was looking for.

- CSC 510 (Spring 2018):
  - It was a fun, intuitive class. Did not expect SE to be this fun. …. Good course structure, having two projects really enforce the practical aspect of theory explained in the course …The course has two projects which are intensive and call for the application of the concepts studied in the course. The first project is the one which we developed from scratch. And the second project is the one which is developed by some other team but is made feature-rich or modified positively by another. It's a great concept. This way students get an opportunity of learning how other people have implemented a certain thing and how they add on to it. … Strength: shares industrial experiences which is very helpful … It was fun attending his lectures. …The instructor was pretty enthusiastic and taught with a lot of energy. The lectures were interesting and exciting. … The professor explains a lot about the related things happening in the world… SE course is too broad. Prof Menzies tries his best to teach the class the way of industry. … Strengths - "Very knowledgeable" and he knows it. Weaknesses - Very knowledgeable and "he knows it".
- CSC591-023 (2017):
  - So much enthusiasm OMG!! That is what students need to see in a professor. If it would not have been for his enthusiasm we would not have done our project so well. It just feels good to be in his class. Perfect presentation skills! Glad I took the course…. One of the rare and best course at NC State for data science. Everyone must take it!!! Make it compulsory of Data Science track…. This course was amazing, I learned many things from the lectures and the core concept of the subject was very through and with so many hands on experiments we learned the subject very well…. 'This course had everything in perfect order, the core basics, experiment with real lift examples, latest most advanced topics to oldest most reliable ones. With the lectures on different papers i learned what are different research topics that is being performed in the industry.' 'This course was very through and well planned. The lectures were really enjoyable. And the homeworks were really good and we can learn a lot from them…. 'Very passionate about the material he teaches.'...'Prof. Menzies's classes are very interesting and engaging'
- CSC510 (2017):
  - Treats students with respect, very enthusiastic about teaching the course. … The instructor is so knowledgeable. He can extends the talk to a lot of things related. Haven't seen any other professor so enthusiastic about the subject. Sometimes I feel hard to follow. … immense knowledge about the subject. He is very enthusiastic; creates a light hearted mood in the classroom and encourages student participation. … don't know any other instructor, younger or older, who is as enthusiastic, optimistic and excited about their course. Helps to update oneself to how software is being designed, coded and tested in outside work. Needs, more concentration on coding/projects (including designing and testing/mocking) and how to tackle the problems (faced during software development cycle) - rather than theory. … At times, there is too much theory. … I thought the focus on research didn't really make sense for this course. …. but often he will go off on a tangent, pulling up dense (in terms of content and newness to students) research papers of his own and talk about them at great length.
- Dec 2017, I received the "Letter of Gratitude" show at right from one of my graduate subject's attendees.
- Prof. Warwick Arden (Provost) mailed me on Mark 16 2016 saying that some students had used the "Thank a Professor" website to comment favorable on my teaching:
  - He writes "You efforts with these students area reflection of your dedication to teaching and learning. I congratulate you on this recognition and offer by sincere appreciate for your work with students at NCSU.
  - Student comments included "I compare you to an owl because you have a deep connection with wisdom and intuitive knowledge. You have been kind and patient with me and your students. Thank you for everything."


Letter of Gratitude Inbox x

GURU DARSHAN POLLEPALLI MANOHARA 1:26 PM (1 hour ago)
to me

Categorize this message as: Personal Never show this again

Hi,

My name is Guru Darshan. I had enrolled in the course Foundations of Software Science during Fall 2017. I wanted to write this email as a token of appreciation for helping me and guiding me during the coursework. It was your words of encouragement which helped me to secure a decent grade in the course. The course was brilliantly designed and taught. You were able to explain even the most complex algorithms with simple tools and examples. I had an amazing learning experience in this course.

My major was in Computer Networking so I had very little exposure to Machine Learning and Data Mining prior to this course. The first few classes were very difficult to understand due to my knowledge gap. So, one day I decided to request your help and I am really glad that I did. You were kind enough to understand my situation and agreed to help me with the final project. It really provided me with the necessary confidence. You provided valuable inputs for the project. It was only then that I clearly understood what my project was going to be.

I still consider myself to be a beginner when it comes to Machine Learning but this course has provided me with knowledge and intuition about data mining which I wouldn't have received elsewhere. Thank you for being an amazing professor.

Regards

...

Guru Darshan Pollepalli Manohara

- **CSC591-006 (2016):**
  - Great teaching! … Great prof! … Course taught well. The best lecturer I've had at NC State with Samitova as a close second…. Understood the material well enough to talk off the cuff which means it stayed interesting and well paced. Good interaction with students, always get quick and useful feedback…. Good training of data science and programming…. Knowledgeable and passionate in teaching…. Tthe course laid a very good foundation of data science and how practice it as software scientists, the reading assignments (although not easy) taught me how to analyze a research paper… The course was excellent.

- **CSC591-007 (2016):**
  - Amazing course structure. Some of the concepts were used in my job interviews… What an enthusiastic professor. So funny and makes the class so interesting… Good homeworks and projects. Good materials…. He is amazing and has a lot of knowledge. He is passionate about what he teaches and that's why it makes the class interesting as well. Learnt a lot from him….. He is really passionate about the things he teaches and is a very congenial teacher… Very passionate about the subject which made me excited to learn ASE… It was an amazing course. What I studied in this course, I could not have learned otherwise. I have not seen another professor as enthusiastic as Dr. Menzeis in teaching a class. Plus, he never lets you feel bored in class. Each and every concept I learned were new for me; which made this class different from other classes and challenging as well. … Very enthusiastic about the material and I loved having the whole course on Github. More instructors should do this. Workshops were also very beneficial more of those please… Professor is very passionate about the subject and is very keen to share what this field has to offer for computer scientists. … : Almost all the concepts learned in this course were new to me and I guess most other students. This is great knowledge that can be applied in any domain of computer science. Professor and TAs are very helpful with doubts. …

- **CSC510 (2016):**
  - Awesome professor. …Nice and kind… Brilliant core course. Fun to learn with Dr Menzies. Must take for anyone aiming to be a Software Engineer. … Good teaching skills. Enthusiastic about the course…. Brought a lot of energy to the class, and made the subject really interesting! Really liked the short language demos… Would recommend this course to anyone who asks! Wish I'd taken it last year, so I could have done some of the other course taught by Dr. Menzies….. I really loved this class because of the teaching style Dr Tim adopted, he teaches by giving these anecdotes and relating everything being taught with his real world experience. It's a joy to attend his classes and learn from him. Professor treated everyone with equality and took great care in making his students aware of how gender bias impact the CS world today and should be broken. He sets an example and also shows mirror to the students who are consciously/unconsciously suffering from the gender bias issues. I really want to praise and thank him for doing that. … The instructor is enthusiastic and knowledgeable. He can explains course concepts clearly and give concrete examples in real life. After class, the instructor also happy to answer students' questions and give very useful feedback. … After taking a really mediocre SE course in my undergrad (not at state), I had high hopes for a graduate level SE course and this definitely did not disappoint! Great instructor that made you want to come to class, with an interesting lecturing style that made me want to engage with the material…. Dr Menzies puts everyone at ease in his classes with his sense of humor. Wonderful teacher with tremendous insight and knowledge. Kept a theoretical subject like SE always interesting with good anecdotes, examples and "What did we discuss in the last class?". Liked his discussion based style of teaching…. The course is well designed, the project gives a good look-in into SE practice.
- **CSC510 (2015)**:
  - Enthusiastic, Very passionate … Dr. Menzies is a fantastic teacher. He loves research work and hard-working. … Excellent teacher with a flair for creating interests in students …. instructors shares his own experience which is valuable for students and gives pretty god idea who software industry works. … Assignments were good and helped in learning. … Tim is a very good professor, whose class is full of fun. He always told something new to us. … Awesome professor … Amazing professor. His enthusiasm for the subject could be felt. … Amazing professor. His enthusiasm for the subject could be felt.
- **Csc591/791 (2014)**:
  - Dr. Menzies is overall an incredibly reasonable instructor that presents material in a way that students can understand it and his expectations can be met with adequate effort. Above all his expectations are well explained at the outset of the course and if you want to be successful in the class you can be successful. ….Professor Menzies was enthusiastic, humorous, and communicated well. He used helpful visualizations, often an upside-down table or contorted elbow, as an analogue for difficult concepts…. I think the instructor is quite enthusiastic and energetic. He makes the class very much interactive…. Very enthusiastic and very intelligent. Conveys the ideas well and uses "perfect" examples …. Using the right example can save a lot

of time which can be used to do more. Course was really good. Content was nice and its very relevant too. Further professor had recommended a book to follow for those who had not done much in python. He recommended it much before the classes started. I finished the book before the classes started and it helped me to become very comfortable with python as the course started. … brilliant course … The Instructor was well prepared and very enthusiastic…. The Instructor was well prepared and very enthusiastic…. Class is *never* boring; even if I had a hard time following the lectures at times, I walked away with new thoughts each class session…. Dr. Menzies is blunt with feedback but it's never personal….. Definitely the most difficult subject I've taken so far. I learned a lot and would do it again if given the choice….. This is cutting edge stuff and is worth the trouble; it's a very different course from a lot of the current offerings, however, and I would highly recommend for any prospective or current PhD students interested in research.

Also, I have taught the following other courses (at previous universities):

- Programming languages , (2009, 2010, 2011, 2012,2013, 2014), 3rd year undergraduate subject
- AI , 2011,2012,2013, 2014 4th year undergraduate subject
- Data mining, (2002,2003,2004,2006,2007,2008,2009,2010,2011,2012,2013) graduate subject
- AI (2008, 2009,2010,2011), graduate subject
- Search-based software engineering (2009,2012, 2014), graduate subject
- Agent-oriented programming (2009), Ph.D. graduate subject
- Open Source Software (2007), 4th year undergraduate subject
- Lightweight Software Engineering (2004), 4th year undergraduate subject
- Knowledge engineering (2002, 2003), 4th year undergraduate subject
- Software V&V (2003), Masters course year
- Modelling and analysis of software (2000), 4th year undergraduate subject
- Domain specific languages (2001), graduate class.
- OO software development (1997-98), 4th year undergraduate subject
- Visual programming (1996), 3rd year undergraduate subject
- Software engineering (1996), 3rd year undergraduate subject

B. INSTRUCTIONAL DEVELOPMENT

- New course Foundations of Software Science: At NC State in 2017 I created and taught the new .All lectures and projects were written by me.
- *New course Automated Software Engineering:* At NC State in 2015 I created and taught a new subject automated software engineering. All lectures and projects were written by me.
- *New course Search-based Software Engineering:* At NC State in 2014 I created and taught a new subject on search-based software engineering. An updated version of this will be taught in Fall 2015 as Automated (model-based) Software Engineering.
- *New course Artificial Intelligence.* At West Virginia University in 2008, 2010, 2012 I created then completely updated an undergraduate subject on artificial intelligence.
- *Programming languages*. At West Virginia University in 2009 and 2011 I updated the undergraduate programming language subject to include logic programming and functional programming.
- *Data mining:* At West Virginia University in 2002, I created and taught a graduate subject on this topic. This subject was extensively revised each year 2003 to 2013.
- *Agent*-oriented programming: At West Virginia University in 2009, I created and taught a graduate subject on this topic.
- *Knowledge engineering:* At West Virginia University in 2002, I created and taught a graduate subject on this topic.
- *Domain specific languages.* At the University of British Columbia in 2001, I created and taught a graduate subject on this topic.
- *Visual programming languages.* At Monash University in 1996, I created and taught a graduate subject on this topic.
- *Research methods.* At Monash University in 1995, I created a subject on graduate research methods.

C. MENTORING ACTIVITIES

- Working with my SE faculty colleagues, developed a successful NSF Research Experience for Undergraduates grant for "Science of Software", 2016-2018.
- Mentor for
    - **Assistant professor Tom Price**
    - **Associate professor Khaled Harfoush**
    - Associate professor Sarah Heckman
    - Assistant professor Bradley Reaves

D. MASTERS AND DOCTORAL THESES DIRECTED

I am or was chair or co-chair of the advisory committee for the following research students by thesis (students who have graduated= 7 PhD + 279MS):

Student working towards a degree (12 PhD):

1. **Dylan Wilson**
2. **Rahul Yedida**
3. **Kewen Peng**
4. Zhe Yu (passed, oral prelim, Dec 2018)
5. Tianpei (Patrick) Xia
6. Huy (Ken) Tu
7. Suvodeep Majumder
8. Joymallya Chakraborty
9. Rui Shu
10. Fahmid Fahid
11. Shrikanth Chandrasekaran
12. Xueqi (Sherry) Yang

Completed Ph.D.:

1. **Rahul Krishna (2019, Learning Actionable Analytics in Software Engineering)**
2. **Amritanshu Agrawal (2019, On the Nature of Software Engineering Data)**
3. **Jianfeng Chen (2019, On the Value of Sampling and Pruning for Search-Based SE)**
4. **Vivek Nair, (2019, NCSU) Frugal Ways to Find Good Configurations.**
5. Wei Fu, (2018, NCSU) Simpler Software Analytics: When? When Not?
6. Abdel Sayyad Ph.D. (2014, WVU) *Evolutionary Search Techniques with Strong Heuristics for Multi-Objective Feature Selection in Software Product Lines*
7. Joe Krall Ph.D. (2014, WVU) *Active Learning for Search-Based Software Engineering*
8. Fayola Peters Ph.D. (2014, WVU) *Privacy and Data Sharing*
9. Ekrem Ph.D. (2012, WVU) *A Principled Methodology: A Dozen Principles of Software Effort Estimation*
10. Nandeshwar, Ashutosh Ph.D. (2011, WVU) *Longitudinal study of first-time freshmen using data mining*
11. David Owen Ph.D. (2010, WVU) *Combining complementary formal verification strategies to improve performance and accuracy*
12. Scott Chen Ph.D. (2004, U.Sc.) *Data Mining for Effort Estimation*

Completed Masters(*)

1. **FNU Vivek, MS, NC State, 2019**
2. **Akshay Nalwaya MS, NC State, 2019**
3. Sushma Ravichandran, MS, NC State,2018
4. George Mathew, MS, NC State,2016
5. Rahul Krishna, MS, NC State, 2016
6. Divya Ganesan MS (2015,WVU) Exploring Essential Content of Defect Prediction and Effort Estimation through Data Reduction
7. Naveen Kimar, WVU, 2014
8. Ben Province MS (2015, WVU), *The Effects of Parameter Tuning on Machine Learning Performance in a Software Defect Prediction Context.*
9. Vasil Papakroni MS (2013, WVU) *Data Carving: Identifying and Removing Irrelevancies*
10. Joseph Craig MS (2013, WVU) Accelerating MOEA Non-dominated *Sorting by Preserving Archival Relationships*

11. Will Burney MS (2012, WVU) *Understanding Search-Based Software Engineering*
12. Adam Brady MS (2011, WVU) *W2 : a simple, flexible, case-based recommendation engine for software quality*
13. Brian Lemon MS (2010, WVU) *The effect of locality based learning on software defect prediction*
14. Fayola Peters MS (2010, WVU) *CLIFF: finding prototypes for nearest neighbor algorithms with applications*
15. Andrew Matheny MS (2010, WVU) *Trade-offs of heuristic vs. rigorous algorithms in text mining*
16. Joe D'alessandro MS (2010, WVU) *Optimized trusted information sharing*
17. Grey Gay MS (2010, WVU) *The robust optimization of non-linear requirements models*
18. Adam Nelson MS (2010, WVU*) OURMINE: an open source data mining toolkit*
19. Ous El-waras MS (2008, WVU) *Software process control without calibration*
20. Omid Jalali MS (2008, WVU) *Evaluation bias in effort estimation*
21. Zach Milton MS (2008, WVU) *Which: a stochastic best-first search learner*
22. Brian Sower MS (2008, WVU) *Increasing the performance and realism of procedurally generated buildings*
23. Justin DiStefano MS (2008, WVU) *Building better software : the applicability of a professional tool for automa*
24. Daniel Baker MS (2007, WVU) *Hybrid approach to expert and model based effort estimation*
25. Donald Boland MS (2007, WVU) *Data discretization simplified: randomized binary search trees for data preprocessing*
26. Jeremy Greenwald MS (2006, Portland State) *Understanding procedural Knowledge*
27. Ryan Clark MS (2005, Portland State) *Optimizing Treatment Learning*
28. Kareem Ammar (2004, WVU) *Multi-heuristic theory assessment with iterative selection* [
29. Yi Hu MS (2003, University British Columbia) Treatment learning
30. Eliza Chaing MS (2003, University British Columbia) *Early LifeCycle Simulation of Software Process Models*.
31. David Owen MS (2002,WVU) *Combining complementary formal verification strategies to improve performance and accuracy*
32. John Powell MS (2001,WVU) *Graph theoretic approach to assessing tradeoffs on memory usage for model che*cking

III. SCHOLARSHIP IN THE REALMS OF FACULTY RESPONSIBILITY

A. SCHOLARLY ACCOMPLISHMENTS – PUBLICATIONS

Invited and Contributed Research Presentations

1. **Tutorial, LASER summer school on SE (Italy)**
2. **Keynote, ICSE 2019 SEIP**
3. **One journal first presentations, ICSE'19**
4. **Two journal first presentations FSE'19**
5. Invited Talk, CodeFreeze19, Minnisota,2019
6. Invited keynote, Foundations of SE, Florida, 2018
7. Invited keynote, ICSE RAISE workshop, Realizing AI+SE synergies, , May 2018
8. Invited Keynote, Inaugural MSR award, MSR'17
9. Invited Keynote , Data-Driven Search-Based SE, Japan, December 2017.
10. Keynote: SWAN'16 , Seeking simpler software analytics : http://tiny.cc/timm13
11. Keynote NSF PI meeting on sustainable development,, Feb 2017 http://tiny.cc/nsf17
12. Keynote SBST'16 (at ICSE'16): Testing: the (w)hole story.
13. Keynote, ICSE'15 workshop keynote (WetSOM'14): What Metrics matter. Hyderabad, India.

14. Invited Talk, Naval Research Lab, May 2018
15. Invited Talk, Lexis Nexis Cognitive Summit, August 2018
16. Invited Talk, Monash University Dean's series, Australia, July 2017
17. Invited Talk, IBM Technical Interchange Conferences, November 2017
18. Invited ICSE talk: Trends in topics at SE conferences (1993-2013). ICSE (Companion Volume) 2017: 397-398
19. Invited talk, 52nd CREST workshop, University College, London. http://tiny.cc/timcow52
20. Invited speaker, Lexis Nexis industry day, August 2016 http://tiny.cc/timm9

21. Journal-First presentation, FSE'17 Are Delayed Issues Harder to Resolve?
22. Journal-First presentation, FSE'15 Geometric Active Learning

23. Tutorial, ICSE'16: How Not to do it: Anti-patterns in data science
24. Tutorial, ICSE'15: Art and Science of Analyzing Software Data

Refereed Journal and Top Magazine Publications

1. **Z Yu, C Theisen, L Williams, T Menzies , Improving Vulnerability Inspection Efficiency Using Active Learning. Accepted to appear IEEE Transactions on Software Engineering, 2019.**
2. **A Agrawal, W Fu, D Chen, X Shen, T Menzies. How to" DODGE" Complex Software Analytics Accepted to appear IEEE Transactions on Software Engineering, 2019.**
3. **Zhe Yu ; Christopher Theisen ; Laurie Williams ; Tim Menzies, Improving Vulnerability Inspection Efficiency Using Active Learning, to appear IEEE Transactions of SE, 2019.**
4. **Junjie Wang ; Song Wang ; Jianfeng Chen ; Tim Menzies ; Qiang Cui ; Miao Xie ; Qing Wang, Characterizing Crowds to Better Optimize Worker Recommendation in Crowdsourced Testing, IEEE Transactions on SE, to appear, 2019**
5. **Amritanshu Agrawal, Tim Menzies, Leandro L. Minku, Markus Wagner, Zhe Yu, Better Software Analytics via "DUO": Data Mining Algorithms Using/Used-by Optimizers. Accepted, to appear, Journal of Empirical Software Engineering, 2019**
6. **Junjie Wang, Mingyang Li, Song Wang, Tim Menzies, Qing Wang: Images don't lie: Duplicate crowdtesting reports detection with screenshot information. Information & Software Technology 110: 139-155 (2019)**
7. **Tim Menzies, Martin J. Shepperd: "Bad smells" in software analytics papers .Information & Software Technology 112: 35-47 (2019)**
8. **Rahul Krishna, Tim Menzies: Bellwethers: A Baseline Method for Transfer Learning. IEEE Trans. Software Eng. 45(11): 1081-1105 (2019)**
9. Vivek Nair, Zhe Yu, Tim Menzies, Norbert Siegmund, Sven Apel, Finding Faster Configurations using FLASH, IEEE Transactions on SE, 2018
10. G Mathew, A Agrawal, T Menzies. Finding Trends in Software Research, IEEE Transactions on Software Engineering, 2018.

11. M Choetkiertikul, HK Dam, T Tran, TTM Pham, A Ghose, T Menzies , A deep learning model for estimating story points. IEEE Transactions on Software Engineering
12. Zhe Yu, Nicholas A. Kraft, Tim Menzies, Finding better active learners for faster literature reviews. Empirical Software Engineering 23(6): 3161-3186 (2018)
13. Amritanshu Agrawal, Wei Fu, Tim Menzies: What is wrong with topic modeling? And how to fix it using search-based software engineering. Information & Software Technology 98: 74-88 (2018)
14. Z Yu, T Menzies. , FAST2: An intelligent assistant for finding relevant papers Expert Systems with Applications 120, 57-71, 2019
15. J Nam, W Fu, S Kim, T Menzies, L Tan, Heterogeneous defect prediction, IEEE Transactions on Software Engineering, June 2017
16. Jianfeng Chen, Vivek Nair, Rahul Krishna, Tim Menzies:"Sampling" as a Baseline Optimizer for Search-Based Software Engineering. IEEE Trans. Software Eng. 45(6): 597-614 (2019)
17. Vivek Nair, Tim Menzies, Norbert Siegmund, Sven Apel: Faster discovery of faster system configurations with spectral learning. Autom. Softw. Eng. 25(2): 247-277 (2018)
18. Jianfeng Chen, Vivek Nair, Tim Menzies: Beyond evolutionary algorithms for search-based software engineering. Information & Software Technology 95: 281-294 (2018).
19. Rahul Krishna, Tim Menzies, Lucas Layman: Less is more: Minimizing code reorganization using XTREE. Information & Software Technology 88: 53-66 (2017)
20. R Pandita, R Jetley, S Sudarsan, T Menzies, L Williams, TMAP: Discovering relevant API methods through text mining of API documentation, Journal of Software: Evolution and Process, accepted 2017. To appear.
21. T Menzies, Y Yang, G Mathew, B Boehm, J Hihn, , Negative results for software effort estimation Empirical Software Engineering, 1-26, 3, 2016
22. T Menzies, N William, F Schull, L Layman Are Delayed Issues Harder to Resolve? Revisiting Cost-to-Fix of Defects throughout the Lifecycle Empirical Software Engineering . Issue 4/2017.
23. W. Fu, T Menzies, X. Shen, Tuning for Software Analytics: is it Really Necessary? Information and Software Technology, Volume 76, August 2016, Pages 135-146
24. J. Krall, T. Menzies and M. Davies, "GALE: Geometric Active Learning for Search-Based Software Engineering," in IEEE Transactions on Software Engineering, vol. 41, no. 10, pp. 1001-1018, Oct. 1 2015.
25. Krall J., Menzies T., Davis,M. Better Model-Based Analysis of Human Factors for Safe Aircraft Approach, submitted, IEEE Transactions on Human Machine System, accepted with minor revision Feb 2014
26. Transfer learning in effort estimation, E Kocaguneli, T Menzies, E Mendes Empirical Software Engineering, 1-31, 2014
27. SN Partington, V Papakroni, T Menzies , Optimizing data collection for public health decisions: a data mining approach, BMC Public Health 14 (1), 593, 2014
28. Reduced Item Food Audits based on the Nutrition Environment Measures Surveys, Susan Partington, Glanz, Karen, Saelens, Brian, Colburn, Trina, Menzies, Tim. American Journal of Preventive Medicine., accepted, to appear
29. The International Center of Excellence in Software Engineering: Accomplishments and Challenges, Shata, M Salah Hamdi, W Abdelmoez, T Menzies, H Ammar, Communications of the ACS 6 (2), 4-11,2014
30. Incremental Development of Fault Prediction Models Yue Jiang, Bojan Cukic, Tim Menzies, Jie Lin, International Journal of Software Engineering and Knowledge Engineering, 23(10), p1399-1425, 2013
31. Ekrem Kocaguneli, Tim Menzies: Software effort models should be assessed via leave-one-out validation. Journal of Systems and Software 86(7): 1879-1890 (2013)
32. Fayola Peters, Tim Menzies, Liang Gong, Hongyu Zhang: Balancing Privacy and Utility in Cross-Company Defect Prediction. IEEE Trans. Software Eng. 39(8): 1054-1068 (2013)
33. Learning Project Management Decisions: A Case Study with Case-Based Reasoning Versus Data Farming T Menzies, A Brady, J Keung, J Hihn, S Williams, O El-Rawas, P Green, , Barry Boehm, IEEE Transactions on Software Engineering, 39(12), oo1698-1713, 2013
34. Ekrem Kocaguneli, Tim Menzies, Jacky W. Keung: Kernel methods for software effort estimation - Effects of different kernel functions and bandwidths on estimation accuracy. Empirical Software Engineering 18(1): 1-24 (2013)
35. "Local vs. Global Lessons for Defect Prediction and Effort Estimation" by Tim Menzies, Andrew Butcher, David Cok, Andrian Marcus, Lucas Layman, Forrest Shull, Burak Turhan, Thomas Zimmermann, IEEE Transactions on Software Engineering, 2013
36. Kocaguneli, E.; Menzies, T.; Keung, J.; Cok, D.; Madachy, R.; , "Active Learning and Effort Estimation: Finding the Essential Content of Software Effort Estimation Data," Software Engineering, IEEE Transactions on ,
37. Jacky Keung, Kocaguneli, Ekrem, Menzies, Tim , "Finding conclusion stability for selecting the best effort predictor in software effort estimation" , Automated Software Engineering, p1-25, May 2012,
38. Markus Lumpe, Rajesh Vasa, Tim Menzies, Rebecca Rush, Burak Turhan:Learning Better Inspection Optimization Policies. International Journal of Software Engineering and Knowledge Engineering 22(5): 621-644 (2012)

39. Ekrem Kocaguneli, Tim Menzies, Ayse Bener, Jacky W. Keung: Exploiting the Essential Assumptions of Analogy-Based Effort Estimation. IEEE Trans. Software Eng. 38(2): 425-438 (2012)
40. "On the Value of Ensemble Effort Estimation" by E. Kocaguneli and Tim Menzies and J. Keung. IEEE Transactions on Software Engineering,2011 . 38(6): 1403-1416 (2012)
41. J. Krall and T.J. Menzies, "Aspects of Replayability and Software Engineering: Towards a Methodology of Developing Games" Journal of Software Engineering and Applications 5 (7), 459-466, 2012
42. H. H. Ammar and T. Menzies and O. Shata and A. Erradiand M. Kessentini and W. Abdelmoez and , M. Kholief and M. Shaheen and M. Abdelhamid, and A AbdelHamid and M.A. Omar and Mohamed Salah Hamdi. "The International Center of Excellence in Software Engineering" Communications of the Arab Computer Society, Vol. 4 No.2, December, 2011
43. Exploring the Effort of General Software Project Activities with Data Mining" by Topi Haapio and Tim Menzies. International Journal of Software Engineering and Knowledge Engineering pages 725-753 2011.
44. "Learning patterns of university student retention" by Ashutosh Nandeshwar and Tim Menzies and Adam Nelson. Expert Systems with Applications , volume 38, number 12, pages 14984 – 14996, 2011 .
45. "What is Enough Quality for Data Repositories?" by Tim Menzies and Adam Brady and Ekrem Kocaguneli. Software Quality Professional, volume 13, number 3, 2011 .
46. A. Tosun and A. Bener and B. Turhan and T. Menzies, "Practical considerations in deploying statistical methods for defect prediction: A case study within the Turkish telecommunications industry" by Information and Software Technology pages 1242-1257 2010 . Available from http://menzies.us/pdf/10practical.pdf .
47. T.J. Menzies and Z. Milton and B. Turhan and B. Cukic and Y. Jiang and A. Bener , "Defect Prediction from Static Code Features: Current Results, Limitations, New Approaches" in Automated Software Engineering December 2010 . Available from http://menzies.us/pdf/10which.pdf .
48. Adam Nelson, Tim Menzies, Gregory Gay, "Sharing Experiments Using Open Source Software" in Software-Practice and Experience September 2010 . Available from http://menzies.us/pdf/10ourmine.pdf .
49. Tim Menzies and Omid Jalali and Jairus Hihn and Dan Baker and Karen Lum, "Stable Rankings for Different Effort Models" by. Automated Software Engineering December 2010 . Available from http://menzies.us/pdf/10stable.pdf .
50. Adam Brady and Tim Menzies and Oussama El-Rawas and Ekrem Kocaguneli and Jacky Keung, "Case-Based Reasoning for Reducing Software Development Effort" in Journal of Software Engineering and Applications 2010 . Available from http://menzies.us/pdf/10w0.pdf .
51. Oussma El-Rawas and Tim Menzies, "A Second Look at Faster, Better, Cheaper" in.Innovations Systems and Software Engineering pages 319-335 2010 .
52. Gregory Gay and Tim Menzies and Misty Davies and Karen Gundy-Burlet, "Automatically finding the control variables for complex system behaviour" in Automated Software Engineering December 2010 . Available from http://menzies.us/pdf/10tar34.pdf. .
53. James H. Andrews and Tim Menzies and Felix Li , "Genetic Algorithms for Randomized Unit Testing" in IEEE Transactions on Software Engineering March 2010 . Available from http://menzies.us/pdf/10nighthawk.pdf .
54. T. Menzies and S. Williams and O. Elrawas and D. Baker and B. Boehm and J. Hihn and K. Lum and R. Madachy, "Accurate Estimates Without Local Data?" Software Process Improvement and Practice pages 213-225 July 2009 . Available from http://menzies.us/pdf/09nodata.pdf .
55. G. Gay and T. Menzies and O. Jalali and G. Mundy and B. Gilkerson and M. Feather and J. Kiper, "Finding robust solutions in requirements models" , Automated Software Engineering December 2009 . Available from http://menzies.us/pdf/09keys2.pdf
56. T. Menzies and O. Mizuno and Y. Takagi and Y. Kikuno, "Explanation vs Performance in Data Mining: A Case Study with Predicting Runaway Projects" by Journal of Software Engineering and Applications pages 221-236 November 2009.
57. B. Turhan, T. Menzies, A. Bener, and J. Distefano. On the relative value of cross-company and within-company data for defect prediction. Empirical Software Engineering, 2009. Available from http://menzies.us/pdf/08ccwc.pdf.
58. T. Menzies, M. Benson, K. Costello, C. Moats, M. Northey, and J. Richarson. Learning better IV&V practices. Innovations in Systems and Software Engineering, March 2008. Available from http://menzies.us/pdf/07ivv.pdf.
59. M. Feather, S. Cornford, K Hicks, J. Kiper, and T. Menzies. Application of a broad-spectrum quantitative requirements model to early-lifecycle decision making. IEEE Software, May 2008. Available from http://menzies.us/pdf/08ddp.pdf.
60. Tim Menzies, Jeremy Greenwald, and Art Frank. Data mining static code attributes to learn defect predictors. IEEE Transactions on Software Engineering, January 2007. Available from http: //menzies.us/pdf/06learnPredict.pdf.
61. Tim Menzies, Alex Dekhtyar, Justin Distefano, and Jeremy Greenwald. Problems with precision. IEEE Transactions on Software Engineering, September 2007. http://menzies.us/pdf/ 07precision.pdf.
62. T. Menzies and Y. Hu. Just enough learning (of association rules): The TAR2 treatment learner. In Artificial Intelligence Review, 2007. Available from http://menzies.us/pdf/07tar2. pdf.
63. T. Menzies, D.Owen, and J. Richardson. The strangest thing about software. IEEE Computer, 2007.

http://menzies.us/pdf/07strange.pdf.
64. Tim Menzies, Zhihao Chen, Jairus Hihn, and Karen Lum. Selecting best practices for effort estimation. IEEE Transactions on Software Engineering, November 2006. Available from http://menzies.us/pdf/06coseekmo.pdf.
65. T. Menzies and J. Richardson. Making sense of requirements, sooner. IEEE Computer, October 2006. Available from http://menzies.us/pdf/06qrre.pdf.
66. T. Menzies and J. Hihn. Evidence-based cost estimation for better quality software. IEEE Software, July/August 2006. Available on-line at http://menzies.us/pdf/06costs.pdf.
67. T. Menzies and C. Pecheur. Verification and Validation and Artificial Intelligence. In M. Zelkowtiz, editor, Advances in Computing, volume 65. Elsevier, 2005. Available from http://menzies. us/pdf/04aivv.pdf.
68. T. Menzies, R. Gunnalan, K. Appukutty, Srinivasan A, and Y. Hu. Learning tiny theories. In International Journal on Artificial Intelligence Tools (IJAIT), to appear, 2005. Available from http://menzies.us/pdf/03select.pdf.
69. Zhihao Chen, Tim Menzies, Dan Port, and Barry Boehm. Finding the right data for software cost modeling. IEEE Software, Nov 2005.
70. T.J. Menzies, R.F. Cohen, S. Waugh, and S. Goss. Applications of abduction: Testing very long qualitative simulations. IEEE Transactions of Data and Knowledge Engineering, pages 1362– 1375, November/December 2003. Available from http://menzies.us/pdf/97iedge. pdf.
71. T. Menzies and J.S. Di Stefano. More success and failure factors in software reuse. IEEE Transactions on Software Engineering, May 2003. Available from http://menzies.us/pdf/ 02sereuse.pdf.
72. T. Menzies and Y. Hu. Data mining for very busy people. In IEEE Computer, November 2003. Available from http://menzies.us/pdf/03tar2.pdf.
73. E. Chiang and T. Menzies. Simulations for very early lifecycle quality evaluations. Software Process: Improvement and Practice, 7(3-4):141–159, 2003. Available from http://menzies. us/pdf/03spip.pdf.
74. T. Menzies and B. Cukic. When to test less. IEEE Software, 17(5):107–112, 2000. Available from http://menzies.us/pdf/00iesoft.pdf.
75. T. Menzies and B. Cukic. Adequacy of limited testing for knowledge based systems. International Journal on Artificial Intelligence Tools (IJAIT), June 2000. Available from http://menzies. us/pdf/00ijait.pdf.
76. T. Menzies, K.D. Althoff, Y. Kalfoglou, and E. Motta. Issues with meta-knowledge. International Journal of Software Engineering and Knowledge Engineering, 10(4), August 2000. Available from http://menzies.us/pdf/00sekej.pdf.
77. Y. Kalfoglou, T. Menzies, K.F. Althoff, and E. Motta. Meta-knowledges in systems design: panacea... or undelivered promise? The Knowledge Engineering Review, 15(4), December 2000. Available from http://menzies.us/pdf/00ker.pdf.
78. Tim Menzies. Critical success metrics: Evaluation at the business-level. International Journal of Human-Computer Studies, special issue on evaluation of KE techniques, 51(4):783–799, October 1999. Available from http://menzies.us/pdf/99csm.pdf.
79. T. Menzies. Knowledge maintenance: The state of the art. The Knowledge Engineering Review, 14(1):1–46, 1999. Available from http://menzies.us/pdf/97kmall.pdf.
80. T. Menzies. Cost benefits of ontologies. ACM SIGART Intelligence magazine, Fall 1999. Available from http://menzies.us/pdf/99sigart.pdf.
81. T.J. Menzies. Towards situated knowledge acquisition. International Journal of Human-Computer Studies, 49:867–893, 1998. Available from http://menzies.us/pdf/98ijhcs.pdf.
82. T.J. Menzies and P. Compton. Applications of abduction: Hypothesis testing of neuroendocrinological qualitative compartmental models. Artificial Intelligence in Medicine, 10:145–175, 1997. Available from http://menzies.us/pdf/96aim.pdf.
83. T.J. Menzies. OO patterns: Lessons from expert systems. Software Practice and Experience, 27(12):1457–1478, December 1997. Available from http://menzies.us/pdf/ 97patern.pdf.
84. T.J. Menzies. Applications of abduction: Knowledge level modeling. International Journal of Human Computer Studies, 45:305–355, 1996. Available from http://menzies.us/pdf/ 96abkl.pdf.
85. T.J. Menzies. An investigation of the ai and expert systems literature 1980-1984. AI Magazine, Summer 1989.
86. T.J. Menzies. Domain-specific knowledge representations. AI Expert, Summer 1989.

Books/Book Chapters

1. Tim Menzies, Justyna Petke: Search Based Software Engineering - 9th International Symposium, SSBSE 2017, Paderborn, Germany, September 9-11, 2017, Proceedings. Lecture Notes in Computer Science 10452, Springer 2017, ISBN 978-3-319-66298-5
2. Perspectives on Data Science for Software Engineering, T. Menzies, L.Williams, T. Zimmermann, Morgan Kaufmann, 2016
3. The Art and Science of Analyzing Software Data, C. Bird, T. Menzies, T. Zimmermann, Morgan Kaufmann, 2015
4. Sharing Data and Models in Software Engineering, T. Menzies, Ekrem Kocaguneli, L. Minku, F. Peters, B. Turhan,

Morgan Kaufmann, 2014

5. Occam's Razor and Simple Software Project Management T Menzies Software Project Management in a Changing World, 447-472, 2014
6. Data mining: a tutorial T Menzies, Recommendation Systems in Software Engineering. Springer, Berlin, 2014
7. "The Quest for Convincing Evidence" by Tim Menzies and Forrest Shull. Making Software: What Really Works and We We Believe it 2010
8. "Condensing uncertainty via Incremental Treatment Learning" by T. Menzies and E. Chiang and M. Feather and Y. Hu and J.D. Kiper. Software Engineering with Computational Intelligence 2003 . Available from http://menzies.us/pdf/02itar2.pdf .
9. "Many Maybes Mean (Mostly) the Same Thing" by T. Menzies and H. Singh. Soft Computing in Software Engineering 2003 . Available fromhttp://menzies.us/pdf/03maybe.pdf .
10. "How Many Tests are Enough?" by T.J. Menzies and B. Cukic. Handbook of Software Engineering and Knowledge Engineering, Volume II 2002 . Available fromhttp://menzies.us/pdf/00ntests.pdf .
11. "SE/KE Reuse Research: Common Themes and Empirical Results" by T.J. Menzies.Handbook of Software Engineering and Knowledge Engineering, Volume II 2002 . Available from http://menzies.us/pdf/00reuse.pdf
12. "Knowledge Elicitation: the State of the Art" by T.J. Menzies. Handbook of Software Engineering and Knowledge Engineering, Volume II 2002 . Available fromhttp://menzies.us/pdf/00getknow.pdf .
13. "Evaluation Issues for Visual Programming Languages" by T. Menzies. Handbook of Software Engineering and Knowledge Engineering, Volume II 2002 . Available fromhttp://menzies.us/pdf/00vp.pdf
14. "Practical Machine Learning for Software Engineering and Knowledge Engineering" by T. Menzies. Handbook of Software Engineering and Knowledge Engineering December 2001 . Available from http://menzies.us/pdf/00ml.pdf .
15. "Expert Systems Maintenance" by T.J. Menzies and J. Debenham. Encyclopedia of Computer Science and Technology pages 35-54 2000 . Available fromhttp://menzies.us/pdf/00cst.pdf .
16. "Software Visualization" by P. Haynes and T. Menzies and R.F. Cohen. 1997 . Available from http://menzies.us/pdf/oovis95.pdf .

Refereed Conference Publications

1. **Tim Menzies: Take control: on the unreasonable effectiveness of software analytics. ICSE (SEIP) 2019: 265-266**
2. **Junjie Wang, Ye Yang, Rahul Krishna, Tim Menzies, Qing Wang: iSENSE: completion-aware crowdtesting management. ICSE 2019: 912-923**
3. **Di Chen, Kathryn T. Stolee, Tim Menzies: Replication can improve prior results: a GitHub study of pull request acceptance. ICPC 2019: 179-190**
4. **Zhe Yu, Fahmid M. Fahid, Tim Menzies, Gregg Rothermel, Kyle Patrick, Snehit Cherian: TERMINATOR: better automated UI test case prioritization. ESEC/SIGSOFT FSE 2019: 883-894**
5. **Jianfeng Chen, Joymallya Chakraborty, Philip Clark, Kevin Haverlock, Snehit Cherian, Tim Menzies: Predicting breakdowns in cloud services (with SPIKE). ESEC/SIGSOFT FSE 2019: 916-924**
6. Amritanshu Agrawal, Tim Menzies: Is "better data" better than "better data miners"?: on the benefits of tuning SMOTE for defect prediction. ICSE 2018: 1050-1061
7. Di Chen, Wei Fu, Rahul Krishna, Tim Menzies: Applications of psychological science for actionable analytics. ESEC/SIGSOFT FSE 2018: 456-467
8. Amritanshu Agrawal, Akond Rahman, Rahul Krishna, Alexander Sobran, Tim Menzies: We don't need another hero?: the impact of "heroes" on software development. ICSE (SEIP) 2018: 245-253
9. Rahul Krishna, Amritanshu Agrawal, Akond Rahman, Alexander Sobran, Tim Menzies: What is the connection between issues, bugs, and enhancements?: lessons learned from 800+ software projects. ICSE (SEIP) 2018: 306-315
10. Suvodeep Majumder, Nikhila Balaji, Katie Brey, Wei Fu, Tim Menzies: 500+ times faster than deep learning: a case study exploring faster methods for text mining stackoverflow. MSR 2018: 554-563
11. Vivek Nair, Amritanshu Agrawal, Jianfeng Chen, Wei Fu, George Mathew, Tim Menzies, Leandro L. Minku, Markus Wagner, Zhe Yu:
12. Data-driven search-based software engineering. MSR 2018: 341-352
13. Jianfeng Chen, Tim Menzies: RIOT: A Stochastic-Based Method for Workflow Scheduling in the Cloud. IEEE CLOUD 2018: 318-325
14. Chin-Jung Hsu, Vivek Nair, Tim Menzies, Vincent W. Freeh: Micky: A Cheaper Alternative for Selecting Cloud Instances. IEEE CLOUD 2018: 409-416
15. Chin-Jung Hsu, Vivek Nair, Vincent W. Freeh, Tim Menzies: Arrow: Low-Level Augmented Bayesian Optimization for Finding the Best Cloud VM. ICDCS 2018: 660-670Wei Fu, Tim Menzies: Easy over hard: a case study on deep learning. ESEC/SIGSOFT FSE 2017: 49-60

16. Wei Fu, Tim Menzies: Revisiting unsupervised learning for defect prediction. ESEC/SIGSOFT FSE 2017: 72-83
17. Vivek Nair, Tim Menzies, Norbert Siegmund, Sven Apel: Using bad learners to find good configurations. ESEC/SIGSOFT FSE 2017: 257-267
18. George Mathew, Tim Menzies, Neil A. Ernst, John Klein: "SHORT"er Reasoning About Larger Requirements Models. RE'17: 154-163
19. J Hihn, M Saing, E Huntington, J Johnson, T Menzies, G Mathew, The NASA analogy software cost model: A web-based cost analysis tool, IEEE Aerospace Conference, 2017, 1-17
20. V Nair, T Menzies, J Chen, An (accidental) exploration of alternatives to evolutionary algorithms for SBSE International Symposium on Search Based Software Engineering, 96-111, 2016.
21. R Krishna, T Menzies, W Fu, Too much automation? the bellwether effect and its implications for transfer learning, ASE'16.
22. J Hihn, L Juster, J Johnson, T Menzies, G Michael, Improving and expanding NASA software cost estimation methods Aerospace Conference, 2016 IEEE, 1-12
23. Lucas Layman, Allen Nikora, Joshua Meek, TIm Menzies,, Topic Modeling NASA Space System Problem Reports (research in Practice Track) , MSR'16 (27% acceptance rate for full papers)
24. Jairus Hihn, Tim Menzies, Improving and Expanding NASA Software Cost Estimation Methods 2016 IEEE Aerospace Conference.
25. Scalable product line configuration: A straw to break the camel's back, ASE , 2013 , AS Sayyad, J Ingram, T Menzies, H Ammar
26. Abdel Salam Sayyad, Tim Menzies, Hany Ammar: On the value of user preferences in search-based software engineering: a case study in software product lines. ICSE 2013: 492-501
27. Class level fault prediction using software clustering, G Scanniello, C Gravino, A Marcus, T Menzies, ASE 2013
28. Sonia Haiduc, Gabriele Bavota, Andrian Marcus, Rocco Oliveto, Andrea De Lucia, Tim Menzies: Automatic query reformulations for text retrieval in software engineering. ICSE 2013: 842-851
29. Tim Menzies: Beyond data mining; towards "idea engineering". PROMISE 2013: 11Learning from open-source projects: An empirical study on defect prediction, Z He, F Peters, T Menzies, Y Yang, ESEM 2013
30. Ekrem Kocaguneli, Bojan Cukic, Tim Menzies, Huihua Lu: Building a second opinion: learning cross-company data. PROMISE 2013: 12
31. Beyond data mining; towards idea engineering T Menzies, PROMISE 2013
32. Ekrem Kocaguneli, Thomas Zimmermann, Christian Bird, Nachiappan Nagappan, Tim Menzies: Distributed development considered harmful? ICSE 2013: 882-890
33. Fayola Peters, Tim Menzies: Privacy and utility for defect prediction: Experiments with MORPH. ICSE 2012: 189-199
34. Yang Sok Kim, Byeong Ho Kang, Seung Hwan Ryu, Paul Compton, Soyeon Caren Han, Tim Menzies: Crowd-Sourced Knowledge Bases. PKAW 2012: 258-271
35. Raymond Borges, Tim Menzies: Learning to change projects. PROMISE 2012: 11-18
36. Ekrem Kocaguneli, Tim Menzies, Jairus Hihn, Byeong Ho Kang: Size doesn't matter?: on the value of software size features for effort estimation. PROMISE 2012: 89-98
37. "How to Find Relevant Data for Effort Estimation?" by Kocaguneli, E. and Menzies, T..Proceedings ESEM11, 2011
38. "Local vs Global Models for Effort Estimation and Defect Prediction" by Menzies, Tim and Butcher, Andrew and Marcus, Andrian and Zimmermann, Thomas and Cok, David. IEEE ASE11 2011 . Available from http://menzies.us/pdf/11ase.pdf .
39. "Text mining in supporting software systems risk assurance" by Huang, LiGuo and Port, Daniel and Wang, Liang and Xie, Tao and Menzies, Tim. IEEE ASE10 pages 163--166 2010. Available from http://menzies.us/pdf/10textrisk.pdf .
40. "On the Shoulders of Giants" by E. Barr and C. Bird and E. Hyatt and T. Menzies and G. Robles. FoSER 2010 November 2010 . Available from http://menzies.us/pdf/10giants.pdf.
41. "Case-Based Reasoning vs Parametric Models for Software Quality optimization" by Adam Brady and Tim Menzies. PROMISE10 2010 . Available from http://menzies.us/pdf/10cbr.pdf .
42. "Software is Data Too" by A. Marcus and T. Menzies. FoSER 2010 November 2010 . Available from http://menzies.us/pdf/10softwareisdata.pdf .
43. "When to Use Data from Other Projects for Effort Estimation" by Ekrem Kocaguneli and Gregory Gay and Tim Menzies and Ye Yang and Jacky W. Keung. IEEE ASE10 2010 . Available from http://menzies.us/pdf/10other.pdf .
44. "Regularities in Learning Defect Predictors" by Burak Turhan, Ayse Bener and Tim Menzies. Profes 2010 2010 . .
45. "On the Value of Learning From Defect Dense Components for Software Defect Prediction Proceedings of PROMISE10" by Hongyu Zhang and Adam Nelson and Tim Menzies. 2010 . Available from http://menzies.us/pdf/10dense.pdf .
46. P. Green and T. Menzies and S. Williams and O. El-waras, "Understanding the Value of Software Engineering Technologies" by IEEE ASE09 2009 . Available from http://menzies.us/pdf/09value.pdf.

47. T. Menzies and O. El-Rawas and J. Hihn and B. Boehm, "Can We Build Software Faster and Better and Cheaper?" by PROMISE09 2009 . Available fromhttp://menzies.us/pdf/09bfc.pdf .
48. K. Gundy-Burlet and J. Schumann and T. Menzies and T. Barrett, "Parametric Analysis of a Hover Test Vehicle Using Advanced Test Generation and Data Analysis" by AIAA Aerospace, 2009,
49. T. Menzies and S. Williams and O. El-rawas and B. Boehm and J. Hihn, "How to Avoid Drastic Software Process Change (using Stochastic Statbility)" by ICSE09 2009 . Available from http://menzies.us/pdf/08drastic.pdf .
50. G. Gay and S. Haiduc and A. Marcus and T. Menzies, "On the use of Relevance Feedback in IR-based Concept Location" by . IEEE ICSM09 2009 . Available fromhttp://menzies.us/pdf/09irrf.pdf .
51. B. Lemon and A. Riesbeck and T. Menzies and J. Price and J DAlessandro and R. Carlsson and T. Prifiti and F. Peters and H. Lu and D. Port. "Applications of Simulation and AI Search: Assessing the Relative Merits of Agile vs Traditional Software Development" IEEE ASE09 2009 . Available from http://menzies.us/pdf/09pom2.pdf .
52. Jamie Andrews and Tim Menzies, "On the Value of Combining Feature Subset Selection with Genetic Algorithms: Faster Learning of Coverage Models" PROMISE09 2009 . Available from http://menzies.us/pdf/09fssga.pdf .
53. G. Gay and T. Menzies and B. Cukic and Burak Turhan, "How to Build Repeatable Experiments" by PROMISE09 2009 . Available from http://menzies.us/pdf/09ourmine.pdf .
54. B. Cukic and T. Menzies and Y. Jiang, "Variance analysis in software fault prediction models" IEEE ISSRE09 2009 . Available from http://menzies.us/pdf/09irrf.pdf .
55. B. Cukic Y. Jiang and T. Menzies. Cost curve evaluation of fault prediction models. In Proceedings, ISSRE'08, 2008. Available from http://menzies.us/pdf/08costcurves.pdf.
56. D. Port, A. Olkov, and T. Menzies. Using simulation to investigate requirements prioritization strategies. In IEEE ASE'08, 2008. Available from http://menzies.us/pdf/ 08simrequire.pdf.
57. T. Menzies and A. Marcus. Automated severity assessment of software defect reports. In ICSM'08, 2008. Available from http://menzies.us/pdf/08severis.pdf.
58. T. Menzies, O. Elrawas, B. Barry, R. Madachy, J. Hihn, D. Baker, and K. Lum. Accurate estimates without calibration. In International Conference on Software Process, 2008. Available from http://menzies.us/pdf/08icsp.pdf.
59. J. Hihn, T. Menzies, K. Lum, T. Menzies, D. Baker, and O. Jalali. 2CEE, a Twenty First Century Effort Estimation Methodology. In ISPA'08: International Society of Parametric Analysis, 2008. Available from http://menzies.us/pdf/08ispa.pdf.
60. K. Gundy-Burlet, J. Schumann, T. Menzies, and T. Barrett. Parametric analysis of antares reentry guidance algorithms using advanced test generation and data analysis. In 9th International Symposium on Artifical Intelligence, Robotics and Automation in Space, 2008. Available from http://menzies.us/pdf/08antares.pdf.
61. T. Menzies, O. Elrawas, J. Hihn, M. Feathear, B. Boehm, and R. Madachy. The business case for automated software engineerng. In ASE '07: Proceedings of the twenty-second IEEE/ACM international conference on Automated software engineering, pages 303–312, New York, NY, USA, 2007. ACM.
62. Y. Jiang, B. Cukic, and T. Menzies. Fault prediction using early lifecycle data. In ISSRE'07, 2007. Available from http://menzies.us/pdf/07issre.pdf.
63. J.H. Andrews, F.C.H. Li, and T. Menzies. Nighthawk: A two-level genetic-random unit test data generator. In IEEE ASE'07, 2007. Available from http://menzies.us/pdf/ 07ase-nighthawk.pdf.
64. T. Menzies and Y. Hu. Agents in a wild world. In C. Rouff, M. Hinchey, J. Rash, W. Truszkowski, and D. Gordon-Spears, editors, Agent Technology from a Formal Perspective. Springer, 2006. Available from http://menzies.us/pdf/01agents.pdf.
65. K. Lum, J. Hihn, and T. Menzies. Sudies in software cost model behavior: Do we really understand cost model performance? In ISPA Conference Proceedings, 2006. Available from http:// menzies.us/pdf/06ispa.pdf.
66. J. Gao, M. Heimdahl, D. Owen, and T. Menzies. On the distribution of property violations in formal models: An initial study. In COMPSAC '06, 2006. Available from http://menzies. us/pdf/06compsac.pdf.
67. M.S. Fisher and T. Menzies. Learning ivv strategies. In HICSS'06, 2006. Available from http: //menzies.us/pdf/06hicss.pdf.
68. T. Menzies and J. Richardson. Xomo: Understanding development options for autonomy. In COCOMO forum, 2005, 2005. Available from http://menzies.us/pdf/05xomo_cocomo_ forum.pdf. For more details, see also the longer technical report http://menzies.us/ pdf/05xomo101.pdf.
69. T. Menzies, D. Port, Z. Chen, J. Hihn, and S. Stukes. Validation methods for calibrating software effort models. In Proceedings, ICSE, 2005. Available from http://menzies.us/pdf/ 04coconut.pdf.
70. T. Menzies, D. Port, Z. Chen, J. Hihn, and S. Stukes. Specialization and extrapolation of induced domain models: Case studies in software effort estimation. In IEEE ASE, 2005, 2005. Available from http://menzies.us/pdf/05learncost.pdf.
71. David Owen, Tim Menzies, Mats Heimdahl, and Jimin Gao. On the advantages of approximate vs. complete verification: Bigger models, faster, less memory, usually accurate. In IEEE NASE SEW 2003, 2003. Available from http://menzies.us/pdf/03lurchc.pdf.

72. D. Owen and T. Menzies. Lurch: a lightweight alternative to model checking. In SEKE ’03, 2003. Available from http://menzies.us/pdf/03lurch.pdf.
73. Tim Menzies and Justin S. Di Stefano. How good is your blind spot sampling policy? In 2004 IEEE Conference on High Assurance Software Engineering, 2003. Available from http:// menzies.us/pdf/03blind.pdf.
74. Tim Menzies, Robyn Lutz, and Carmen Mikulski. Better analysis of defect data at NASA. In SEKE03, 2003. Available from http://menzies.us/pdf/03superodc.pdf.
75. T. Menzies, J.S. Di Stefano, and M. Chapman. Learning early lifecycle IVV quality indicators. In IEEE Metrics ’03, 2003. Available from http://menzies.us/pdf/03early.pdf.
76. Yan Liu, Srikanth Gururajan, Bojan Cukic, Tim Menzies, and Marcello Napolitano. Validating an online adaptive system using svdd. In IEEE Tools with AI, 2003. Available from http: //menzies.us/pdf/03svdd.pdf.
77. D. Geletko and T. Menzies. Model-based software testing via treatment learning. In IEEE NASE SEW 2003, 2003. Available from http://menzies.us/pdf/03radar.pdf.
78. M.S. Feather, T. Menzies, and J.R. Connelly. Relating practitioner needs to research activities, September 2003. Available from http://menzies.us/pdf/03ieeere.pdf.
79. M.S. Feather, T. Menzies, and J.R. Connelly. Matching software practitioner needs to researcher activities. In Proceedings of the 2003 Asia-Pacific Software Engineering Conference (APSEC 2003); Chiangmai, Thailand. December 2003. Available from http://menzies.us/pdf/ 03iemc.pdf.
80. M.S. Feather, T. Menzies, and J.R. Connelly. Identifying fruitful connections between and among researchers and practitioners. In Proceedings of the 2003 IEEE International Engineering Management Conference (IEMC-2003) on Managing Technologically Driven Organizations; Albany, NY,, pages 451–455. November 2003. Available from http://menzies.us/pdf/03iemc.pdf.
81. S. L. Cornford, M. S. Feather, J.R. Dunphy, J. Salcedo, and T. Menzies. Optimizing spacecraft design optimization engine development: Progress and plans. In Proceedings of the IEEE Aerospace Conference, Big Sky, Montana, 2003. Available from http://menzies.us/pdf/03aero. pdf.
82. E. Chiang and T. Menzies. Position paper: Summary of simulations for very early lifecycle quality evaluations. In Prosim ’03, 2003. Available from http://menzies.us/pdf/03prosim. pdf.
83. J.S. Di Stefano and T. Menzies. Machine learning for software engineering: Case studies in software reuse. In Proceedings, IEEE Tools with AI, 2002, 2002. Available from http:// menzies.us/pdf/02reusetai.pdf.
84. D. Owen, T. Menzies, and B. Cukic. What makes finite-state models more (or less) testable? In IEEE Conference on Automated Software Engineering (ASE ’02), 2002. Available from http: //menzies.us/pdf/02moretest.pdf.
85. Tim Menzies, David Raffo, Siri on Setamanit, Ying Hu, and Sina Tootoonian. Model-based tests of truisms. In Proceedings of IEEE ASE 2002, 2002. Available from http://menzies.us/ pdf/02truisms.pdf.
86. T. Menzies, D. Owen, and B. Cukic. Saturation effects in testing of formal models. In ISSRE 2002, 2002. Available from http://menzies.us/pdf/02sat.pdf.
87. T. Menzies and L. Mason. Some prolog macros for rule-based programming: Why? how? In Third ACM SIGPLAN Workshop on Rule-Based Programming (RULE02) Pittsburgh, PA, October 5, 2002. Available from http://menzies.us/pdf/03datasniffing.pdf.
88. Y. Liu, T. Menzies, and B. Cukic. Data sniffing - monitoring of machine learning for online adaptive systems. In IEEE Tools with AI, 2002. Available from http://menzies.us/pdf/ 03datasniffing.pdf.
89. M.S. Feather and T. Menzies. Converging on the optimal attainment of requirements. In IEEE Joint Conference On Requirements Engineering ICRE’02 and RE’02, 9-13th September, University of Essen, Germany, 2002. Available from http://menzies.us/pdf/02re02.pdf.
90. T. Menzies, J. Powell, and M. E. Houle. Fast formal analysis of requirements via ’topoi diagrams’. In ICSE 2001, 2001. Available from http://menzies.us/pdf/00fastre.pdf.
91. T. Menzies and J.D. Kiper. Better reasoning about software engineering activities. In ASE-2001, 2001. Available from http://menzies.us/pdf/01ase.pdf.
92. Tim Menzies, Bojan Cukic, Harhsinder Singh, and John Powell. Testing nondeterminate systems. In ISSRE 2000, 2000. Available from http://menzies.us/pdf/00issre.pdf.
93. T. Menzies and E. Sinsel. Practical large scale what-if queries: Case studies with software risk assessment. In Proceedings ASE 2000, 2000. Available from http://menzies.us/pdf/ 00ase.pdf.
94. T.J. Menzies, S. Easterbrook, Bashar Nuseibeh, and Sam Waugh. An empirical investigation of multiple viewpoint reasoning in requirements engineering. In RE ’99, 1999. Available from http://menzies.us/pdf/99re.pdf.
95. T. Menzies and C.C. Michael. Fewer slices of pie: Optimising mutation testing via abduction. In SEKE ’99, June 17-19, Kaiserslautern, Germany., 1999. Available from http://menzies. us/pdf/99seke.pdf.
96. T. Menzies and B. Cukic. On the sufficiency of limited testing for knowledge based systems. In The Eleventh IEEE International Conference on Tools with Artificial Intelligence. November 9-11, 1999. Chicago IL USA., 1999.
97. T.J. Menzies and S. Waugh. On the practicality of viewpoint-based requirements engineering. In Proceedings, Pacific Rim Conference on Artificial Intelligence, Singapore. Springer-Verlag, 1998. Available from http://menzies.us/pdf/98pracai.pdf.

98. M. Postema, T.J. Menzies, and X. Wu. A decision support tool for tuning parameters in a machine leraning algorithm. In The Joint Pacific Asia Conference on Expert Systems/Singapore International Conference on Intelligent Systems. (PACES/SPICIS '97), 1997. Available from http://menzies.us/pdf/97pakdd.pdf.
99. M.Posterma, X. Wu, and T.J. Menzies. A tuning aid for discretization in rule induction. In First Pacific Asia Conference on Knowledge Discovery and Data Mining (PAKDD97), 1997. Available from http://menzies.us/pdf/97paces.pdf.
100. S Ramakrishnan, T. Menzies, M. Hasslinger, P. Bok, H. McCarthy, B. Devakadadcham, and D. Moulder. On building an effective measurement system for oo software process, product and resource tracking. In Tools Pacific, 1996, 1996.
101. S. Ramakrishnan, T. Menzies, M. Hasslinger, P. Bok, H. Mccarthy, B. Devakadadcham, and D. Moulder. On building an effective measurement system for oo software process. In Proceedings of Tools-Pacific, Melbourne. Prentice-Hall, 1996. Available from http://menzies. us/pdf/96process.pdf.
102. S Ramakrishnan and T. Menzies. An ongoing experiment in o-o software process and product measurements. In Proceedings SEEP'96, New Zealand, 1996.
103. T.J. Menzies. Visual programming, knowledge engineering, and visual programming. In Proceedings of the Eighth International Conference on Software Engineering and Knowledge Engineering. Knowledge Systems Institute, Skokie, Illinois, USA, 1996. Available from http: //menzies.us/pdf/96seke.pdf.
104. T.J. Menzies. On the practicality of abductive validation. In ECAI '96, 1996. Available from http:/menzies.us/pdf/96ok.pdf.
105. T. Menzies and S. Ramakrishnan. Comparing and generalising models for metrics repositories. In Tools Pacific, Melbourne, 1996. Available from http://menzies.us/pdf/96metrics. pdf.
106. M. Connell and T.J. Menzies. Quality metrics: Test coverage analysis for smalltalk. In Tools Pacific, 1996, Melbourne, 1996. Available from http://menzies.us/pdf/96conel.pdf.
107. R.F. Cohen and T. J. Menzies. Providing Software Engineering Students with an Experience in "Big-Computing". In Software Education Conference (SRIG-ET'94), pages 71–76, 1995.
108. T.J. Menzies and P. Haynes. The Methodologies of Methodologies; or, Evaluating Current Methodologies: Why and How. In Tools Pacific '94, pages 83–92. Prentice-Hall, 1994. Available from http://menzies.us/pdf/tools94.pdf.
109. P. Haynes and T.J. Menzies. The Effects of Class Coupling on Class Size in Smalltalk Systems. In Tools '94, pages 121–129. Prentice Hall, 1994.
110. T.J Menzies and R Spurret. How to Edit ¨t¨ or a Black-box Constraint Based Framework for User ı; Interaction with Arbitrary Structures. In Tools Pacific 12, pages 213–224. Prentice Hall, 1993. Available from http://menzies.us/pdf/tools93.pdf.
111. P. Haynes and T.J. Menzies. C++ is Better than Smalltalk? In Tools Pacific 1993, pages 75–82, 1993.
112. T.J. Menzies, J. Edwards, and K. Ng. The Mysterious Case of the Missing Re-usable Class Libraries. In Tools Pacific 1992, pages 421–428. Prentice Hall, 1992. Available from http: //menzies.us/pdf/tools92.pdf.
113. T.J. Menzies, J. Black, J. Fleming, and M. Dean. An expert system for raising pigs. In The first Conference on Practical Applications of Prolog, 1992. Available from http://menzies.us/ pdf/ukapril92.pdf.
114. T.J. Menzies. ISA Object PARTOF Knowledge Representation (part two)? In B. Meyer, editor, Tools Pacific 4, 1991. Available from http://menzies.us/pdf/tools91.pdf.
115. T.J. Menzies. Beyond the mvc triad: Quality assurance via interactive specification editors. In Tools 3: Proceedings of the third International Technology of Object-Oriented Languages and; Systems conference. Prentice-Hall, 1991.
116. Parametric analysis of a hover test vehicle using advanced test generation and data analysis.
117. T. Menzies and H. Singh. How AI can help SE; or: Randomized search not considered harmful. In AI'2001: the Fourteenth Canadian Conference on Artificial Intelligence, June 7-9, Ottawa, Canada, 2001. Available from http://menzies.us/pdf/00funnel.pdf.
118. S. Waugh, J. Blogs, and T. Menzies. The temporal qualitative compartmental modeling language. In Proceedings of the Australain AI '98 conference, 1998. Available from http://menzies. us/pdf/97links.pdf.
119. T.J. Menzies and S. Waugh. Lower limits on the size of test data sets. In Proceedings of the Australian AI '98 conference. World-Scientific, 1998. Available from http://menzies.us/ pdf/98ozai.pdf.
120. S. Waugh, T.J. Menzies, and S. Goss. Evaluating a qualitative reasoner. In Abdul Sattar, editor, Advanced Topics in Artificial Intelligence: 10th Australian Joint Conference on AI. Springer-Verlag, 1997. http://www.cse.unsw.edu.au/˜timm/pub/docs.
121. T.J. Menzies. Situated Semantics is a Side-Effect of the Computational Complexity of Abduction. In Australian Cognitive Science Society, 3rd Conference, 1995. Available from http: //menzies.us/pdf/cogsci95.pdf.
122. T.J. Menzies. Limits to Knowledge Level-B Modeling (and KADS). In Proceedings of AI '95, Australia. World-Scientific, 1995. Available from http://menzies.us/pdf/95akads. pdf.
123. T.J. Menzies and P. Compton. A Precise Semantics for Vague Diagrams. In C. Zhang, J. Debenham, and D. Lukose, editors, Proceedings of Australian AI'94, pages 149–156. World Scientific, 1994. Available from http://menzies.us/pdf/ai94.pdf.

124. T.J. Menzies. Maintaining procedural knowledge: Ripple-down-functions. In Proceedings of AI '92, Australia, 1992. Available from http://menzies.us/pdf/ai92.pdf.
125. A.J. Mahidadia, P. Compton, T.J. Menzies, C. Sammut, and G.A. Smythe. Inventing causal qualitative models: A tool for experimental research. In AI '92, Horbart, Australia. World-Scientific, 1992.
126. T.J. Menzies. Isa object part-of knowledge representation? In Proceedings AI '90, 1990.
127. T.J. Menzies, M. Dean, J. Black, and J. Fleming. Combining heuristics with simulation models: An expert system for the optimal management of pig. In AI '88, 1988. Adelaide, Australia.
128. T.J. Menzies and C. Worral. Worlds in prolog. In Proceedings of AI '87, 1987.
129. T.J. Menzies and B.R. Markey. A micro-computer, rule-based prolog expert-system for process control in a petrochemical plant. In Proceedings of the Third Australian Conference on Expert Systems, May 13-15, 1987.

High Impact, Non-Refereed Publications

1. Tim Menzies, Thomas Zimmermann:, Software Analytics: What's Next? IEEE Software 35(5): 64-70 (2018)
2. Rafael Prikladnicki, Tim Menzies: From Voice of Evidence to Redirections. IEEE Software 35(1): 11-13 (2018)
3. Olga Baysal, Tim Menzies: Proceedings of the 3rd ACM SIGSOFT International Workshop on Software Analytics, SWAN@ESEC/SIGSOFT FSE 2017, Paderborn, Germany, September 4, 2017. ACM 2017, ISBN 978-1-4503-5157-7
4. Marouane Kessentini, Tim Menzies" A guest editorial: special issue on search based software engineering and data mining. Autom. Softw. Eng. 24(3): 573-574 (2017)
5. Ye Yang, Davide Falessi, Tim Menzies, Jairus Hihn: Actionable Analytics for Software Engineering. IEEE Software 35(1): 51-53 (2018)
6. Tim Menzies, Cross-Project Data for Software Engineering, IEEE Computer December, 2015, p6
7. Bird, Christian, Timothy Menzies, and Thomas Zimmermann. "Past, Present, and Future of Analyzing Software Data." Elsevier Inc.. 2015 in The Art and Science of Analyzing Software Data C. Bird, T. Menzies, T. Zimmermann, Morgan Kaufmann, 2016
8. Tim Menzies, Corina Pasareanu, Guest editorial: special multi-issue on selected topics in Automated Software Engineering. Automated Software Engineering journal, 22(3) 289-290, 2015
9. R. Harrison, T. Menzies, Guest editorial: special issue on realizing AI synergies in software engineering, Automated Software Engineering, 22(1), 2015
10. Tim Menzies: Beyond Data Mining. IEEE Software 30(3): 92 (2013)
11. Tim Menzies, Thomas Zimmermann: Software Analytics: So What? IEEE Software 30(4): 31-37 (2013)
12. Tim Menzies, Thomas Zimmermann: The Many Faces of Software Analytics. IEEE Software 30(5): 28-29 (2013)
13. Tim Menzies: Guest editorial for the Special Section on BEST PAPERS from the 2011 conference on Predictive Models in Software Engineering (PROMISE). Information & Software Technology 55(8): 1477-1478 (2013)
14. Tim Menzies, Martin Shepperd: Special issue on repeatable results in software engineering prediction. Empirical Software Engineering 17(1-2): 1-17 (2012)
15. T. Menzies. 21st century AI: proud, not smug. IEEE Intelligent Systems, 2003. Available from http://menzies.us/pdf/03aipride.pdf.
16. T. Menzies and F. van Harmelen. Editorial: Evaluating knowledge engineering techniques. International Journal of Human-Computer Studies, special issue on evaluation of Knowledge Engineering Techniques, 51(4):717–727, October 1999. Available from http://menzies.us/pdf/ 99ekeed.pdf.
17. T. Menzies. Knowledge maintenance heresies: Meta-knowledge complicates km. In 11th Annual International Conference on Software Engineering and Knowledge Engineering, Kaiserslautern, Germany, June 17 - 19, 1999, 1999. Available from http://menzies.us/pdf/99sekekm. pdf.
18. T. Menzies. Desert island column. Automated Software Engineering, 6(3):315–320, 1999. Available from http://menzies.us/desert.html.

Other Publications (workshops, etc)

1. Zhe Yu, Tim Menzies. Data Balancing for Technologically Assisted Reviews: Undersampling or Reweighting. CLEF (Working Notes) 2017
2. Neil A. Ernst, John Klein, George Mathew, Tim Menzies: Using Stakeholder Preferences to Make Better Architecture Decisions. ICSA Workshops 2017: 133-136
3. Data Mining Methods and Cost Estimation Models: Why is it So Hard to Infuse New Ideas? Jairus Hihn, Tim Menzies, 2015 30th IEEE/ACM International Conference on Automated Software Engineering Workshop (ASEW)
4. Learning the task management space of an aircraft approach model, AAAI 2014 Spring Symposium, Joseph Krall, Tim Menzies, Misty Davis.

5. Replication in Empirical Software Engineering Research (RESER). On parameter tuning in search based software engineering: A replicated empirical study, AS Sayyad, K Goseva-Popstojanova, T Menzies, H Ammar, 2013
6. Rachel Harrison, Daniela Carneiro da Cruz, Pedro Rangel Henriques, Maria João Varanda Pereira, Shih-Hsi Liu, Tim Menzies, Marjan Mernik, Daniel Rodríguez:Report from the first international workshop on realizing artificial intelligence synergies in software engineering (RAISE 2012). ACM SIGSOFT Software Engineering Notes 37(5): 34-35 (2012)
7. Menzies, Tim and Bird, Christian and Zimmermann, Thomas and Schulte, Wolfram and Kocaganeli, Ekrem. The inductive software engineering manifesto: principles for industrial data mining by Proceedings of the International Workshop on Machine Learning Technologies in Software Engineering 19--26 2011 .
8. B. Turhan, A. Bener, and T. Menzies. Nearest neighbor sampling for cross company defect predictors. In Proceedings, DEFECTS 2008, 2008. hW.
9. T. Menzies, B. Turhan, A. Bener, G. Gay, B. Cukic, and Y. Jiang. Implications of ceiling effects in defect predictors. In Proceedings of PROMISE 2008 Workshop (ICSE), 2008. Available from http://menzies.us/pdf/08ceiling.pdf.
10. Y. Jiang, B. Cukic, T. Menzies, and N. Bartlow. Comparing design and code metrics for software quality prediction. In Proceedings of the PROMISE 2008 Workshop (ICSE), 2008. Available from http://menzies.us/pdf/08compare.pdf.
11. Y. Jiang, B. Cukic, and T. Menzies. Does transformation help? In Defects 2008, 2008. Available from http://menzies.us/pdf/08transform.pdf.
12. T. Menzies, O. Elrawas, D. Baker, J. Hihn, and K. Lum. On the value of stochastic abduction (if you fix everything, you lose fixes for everything else). In International Workshop on Living with Uncertainty (an ASE'07 co-located event), 2007. Available from http://menzies.us/pdf/ 07fix.pdf.
13. T. Menzies, D. Allen, and A. Orrego. Bayesian anomaly detection (bad v1.0). In Proceedings of the Machine Learning Algorithms for Surveillance and Event Detection Workshop, ICML'06, 2006. Available from http://menzies.us/pdf/06bad.pdf.
14. T. Menies, K. Lum, and J. Hihn. The deviance problem in effort estimation. In PROMISE, 2006, 2006. Available from http://menzies.us/06deviations.pdf.
15. M. . Feather, S.. Cornford, J. Kiper, and T. Menzies. Experiences using visualization techniques to present requirements, risks to them, and options for risk mitigation. In First International Workshop on Requirements Engineering Visualization, 2006. Available from http: //menzies.us/pdf/06rev.pdf.
16. Tim Menzies, Zhihao Chen, Dan Port, and Jairus Hihn. Simple software cost estimation: Safe or unsafe? In Proceedings, PROMISE workshop, ICSE 2005, 2005. Available from http: //menzies.us/pdf/05safewhen.pdf.
17. Zhihoa Chen, Tim Menzies, and Dan Port. Feature subset selection can improve software cost estimation. In PROMISE'05, 2005. Available from http://menzies.us/pdf/05/ fsscocomo.pdf.
18. T. Menzies, Justin S. Di Stefano, Chris Cunanan, and Robert (Mike) Chapman. Mining repositories to assist in project planning and resource allocation. In International Workshop on Mining Software Repositories, 2004. Available from http://menzies.us/pdf/04msrdefects.pdf.
19. T. Menzies, S. Setamanit, and D. Raffo. Data mining from process models. In PROSIM 2004, 2004. Available from http://menzies.us/pdf/04dmpm.pdf.
20. T. Menzies, J. DiStefano, A. Orrego, and R. Chapman. Assessing predictors of software defects. In Proceedings, workshop on Predictive Software Models, Chicago, 2004. Available from http: //menzies.us/pdf/04psm.pdf.
21. A. Dekhtyar, J. Huffman Hayes, and T. Menzies. Text is software too. In International Workshop on Mining Software Repositories (submitted), 2004. Available from http://menzies.us/ pdf/04msrtext.pdf.
22. T. Burkleaux, T. Menzies, and D. Owen. Lean = (lurch+tar3) = reusable modeling tools. In Proceedings of WITSE 2005, 2004. Available from http://menzies.us/pdf/04lean. pdf.
23. T. Menzies, J. Kiper, and M. Feather. Improved software engineering decision support through automatic argument reduction tools. In SEDECS'2003: the 2nd International Workshop on Software Engineering Decision Support (part of SEKE2003), June 2003. Available from http: //menzies.us/pdf/03star1.pdf.
24. Tim Menzies, Justin S. DiStefeno, Mike Chapman, and Kenneth Mcgill. Metrics that matter. In 27th NASA SEL workshop on Software Engineering, 2002. Available from http://menzies. us/pdf/02metrics.pdf.
25. T. Menzies, A. Pearce, C. Heinze, and S. Goss. What is an agent and why should i care? In Formal Aspects of Agent-Based Systems, 2002. Available from http://menzies.us/pdf/ 02agentis.pdf.
26. T. Menzies, D. Owen, and B. Cukic. You seem friendly, but can i trust you? In Formal Aspects of Agent-Based Systems, 2002. Available from http://menzies.us/pdf/02trust.pdf.
27. D. Owen and T. Menzies. Random search of and-or graphs representing finite-state models. In Proceedings of the First International Workshop on Model-based Requirements Engineering, 2001. Available from http://menzies.us/pdf/01randandor.pdf.

28. T. Menzies and H. Singh. Many maybes mean (mostly) the same thing. In 2nd International Workshop on Soft Computing applied to Software Engineering (Netherlands), February, 2001. Available from http://menzies.us/pdf/00maybe.pdf.
29. T. Menzies and Y. Hu. Reusing models for requirements engineering. In First International Workshop on Model-based Requirements Engineering, 2001. Available from http://menzies. us/pdf/01reusere.pdf.
30. T. Menzies and Y. Hu. Constraining discussions in requirements engineering. In First International Workshop on Model-based Requirements Engineering, 2001. Available from http: //menzies.us/pdf/01lesstalk.pdf.
31. T. Menzies and B. Cukic. Average case coverage for validation of ai systems. In AAAI Stanford Spring Symposium on Model-based Validation of AI Systems, 2001. Available from http:// menzies.us/pdf/01validint.pdf.
32. T.J. Menzies. The complexity of trmcs-like spiral specification. In Proceedings of 10th International Workshop on Software Specification and Design (IWSSD-10), 2000. Available from http://menzies.us/pdf/00iwssd.pdf.
33. Tim Menzies, Bojan Cukic, and Harhsinder Singh. Agents talking faster, April 2000. NASA Goddard Workshop on Formal Aspects of Agent-Oriented Systems. Available from http:// menzies.us/pdf/00godd.pdf.
34. T. Menzies, E. Sinsel, and T. Kurtz. Learning to reduce risks with cocomo-ii. In Workshop on Intelligent Software Engineering, an ICSE workshop, and NASA/WVU Software Research Lab, Fairmont, WV, Tech report # NASA-IVV-99-027, 2000. Available from http://menzies.us/ pdf/00wise.pdf.
35. T. Menzies and B. Cukic. Maintaining maintainability = recognizing reachability. In International Workshop on Empirical Studies of Software Maintenance (WESS 2000), October 14, San Jose CA, 2000. Available from http://menzies.us/pdf/00wess.pdf.
36. T. Menzies, B. Cukic, and E. Coiera. Smaller, faster dialogues via conversational probing. In AAAI'99 workshop on Conflicts and Identifying Opportunities., 1999. Available from http: //menzies.us/pdf/99aaaic.pdf.
37. T. Menzies and B. Cukic. Intelligent testing can be very lazy. In Proceedings, AAAI '99 workshop on Intelligent Software Engineering, Orlando, Florida, July 1999. Available from http:// menzies.us/pdf/99waaai.pdf.
38. T. Menzies. hQkb- the high quality knowledge base initiative (sisyphus v: Learning design assessment knowledge). In KAW'99: the 12th Workshop on Knowledge Acquisition, Modeling and Management, Voyager Inn, Banff, Alberta, Canada Oct 16-22, 1999, 1999. Available from http://menzies.us/pdf/99hqkb.pdf.
39. D. Richards and T.J. Menzies. Extending the sisyphus iii experiment from a knowledge engineering task to a requirements engineering task. In Banff Workshop on Knowledge Acquisition, 1998. Available from http://menzies.us/pdf/98kawre.pdf.
40. T.J. Menzies and S. Waugh. More results on the practical lower limits of test set size. In Proceedings Pacific Knowledge Acquisition Workshop, Singapore, November, 1998, 1998. Available from http://menzies.us/pdf/98pkaw.pdf.
41. T.J. Menzies, R.F. Cohen, and S. Waugh. Evaluating conceptual qualitative modeling languages. In Banff KAW '98 workshop., 1998. Available from http://menzies.us/pdf/97modlan. pdf.
42. T.J. Menzies. Evaluation issues with critical success metrics. In Banff KA '98 workshop., 1998. Available from http://menzies.us/pdf/97langevl.pdf.
43. T.J. Menzies. Evaluation issues for problem visual programming languages, 1998. Banff KA workshop, 1998. Available from http://menzies.us/pdf/97evalvp.pdf.
44. T.J. Menzies. Evaluation issues for problem solving methods. In Banff Knowledge Acquisition workshop, 1998, 1998. Available from http://menzies.us/pdf/97eval.pdf.
45. T. Menzies. Applications of abduction: A unified framework for software and knowledge engineering. Asian-Pacific Workshop on Intelligent Software Engineering, 1998. Available from http://menzies.us/pdf/98apwise.pdf.
46. D. Richards and T.J. Menzies. Extending knowledge engineering to requirements engineering from multiple perspectives. In T.J. Menzies, D. Richards, and P. Compton, editors, Third Australian Knowledge Acquisition Workshop, Perth, 1997. Available from http://menzies.us/pdf/ 97akawre.pdf.
47. T.J. Menzies and A. Mahidadia. Ripple-down rationality: A framework for maintaining psms. In Workshop on Problem-Solving Methods for Knowledge-based Systems, IJCAI '97, August 23., 1997. Available from http://menzies.us/pdf/97rdra.pdf.
48. T.J. Menzies and R.E. Cohen. A graph-theoretic optimisation of temporal abductive validation. In European Symposium on the Validation and Verification of Knowledge Based Systems, Leuven, Belgium, 1997. Available from http://menzies.us/pdf/97eurvav.pdf.
49. T.J. Menzies and S. Goss. Vague models and their implications for the kbs design cycle. In Proceedings PKAW '96: Pacific Knowledge Acquisition Workshop and Monash University Department of Software Development Technical Report TR96-15, 1996. Available from http: //menzies.us/pdf/96abmod.pdf.
50. T.J. Menzies. Assessing responses to situated congition. In Proceedings of the 10th Knowledge Acquisition Workshop for Knowledge-Based Systems, Banff,Canada, 1996. Available from http: //menzies.us/pdf/96sitcog.pdf.

51. Tim Menzies. Expert systems inference = modeling conflicts. In Proceedings of the ECAI ’96 workshop on Modelling Conflicts in AI, 1996. Available from http://menzies.us/pdf/ 96ecaimc.pdf.
52. T. Menzies. Generalised test = generalised inference. In Proceedings of the ECAI ’96 workshop on Validation, Verification, and Refinement of KBS, 1996. Available from http://menzies. us/pdf/96ecaivv.pdf.
53. T.J. Menzies and S. Goss. Applications of abduction #3: “black-box” to “gray-box” model. In AI in Defence Workshop, Australian AI’95, also Technical Report TR95-31, Department of Software Development, Monash University, 1995. Available from http://menzies.us/pdf/ 95gray.pdf.
54. T.J. Menzies and P. Compton. The (extensive) implications of evaluation on the development of knowledge-based systems.
55. In Proceedings of the 9th AAAI-Sponsored Banff Knowledge Acquisition for Knowledge Based Systems,, 1995. Available from http://menzies.us/pdf/ banff95.pdf.
56. P. Haynes, T. Menzies, and G. Phipps. Using the size of classes and methods as the basis for early effort prediction; empirical observations, initial application; a practitioners experience report. In OOPSLA Workshop on OO Process and Metrics for Effort Estimation, 1995.
57. T.J. Menzies and W. Gambetta. Exhaustive Abduction: A Practical Model Validation Tool. In ECAI ’94 Workshop on Validation of Knowledge-Based Systems, 1994. Available from http: //menzies.us/pdf/ecai94.pdf.
58. T.J. Menzies and P. Compton. Knowledge acquisition for performance systems; or: When can ”tests” replace ”tasks”? In Proceedings of the 8th AAAI-Sponsored Banff Knowledge Acquisition for Knowledge-Based Systems Workshop, Banff, Canada, 1994. http://menzies.us/pdf/ banff94.pdf.
59. T.J. Menzies. The complexity of model review. In DX-93: The International Workshop on Principles on Model-Based Diagnosis, 1993.
60. T.J. Menzies, P. Compton, and A. Mahidadia. Communicating research models of human physiology using qualitative compartmental modeling. In Communicating Scientific and Technical Knowledge, an AAAI ’92 workshop, 1992.
61. T.J. Menzies, P. Compton, B. Feldman, and T. Toft. Qualitative compartmental modeling. In Proceedings of the AAAI Symposium on Diagrammatic Reasoning Stanford University, March 2527, 1992.
62. T.J. Menzies and P. Compton. Causal explanations as a tool for refining qualitative models. In ECAI ’92 Workshop on Improving the Use of Knowledge-Based Systems with Explanations, Vienna, 1992.
63. T. Menzies, A. Mahidadia, and P. Compton. Using causality as a generic knowledge representation, or why and how centralised knowledge servers can use causality. In Proceedings of the 7th AAAISponsored Banff Knowledge Acquisition for Knowledge-Based Systems Workshop, 1992.
64. T. Menzies, A. Mahidadia, and P. Compton. Using Causality as a Generic Knowledge Representation, or Why and How Centralised Knowledge Servers Can Use Causality. In Proceedings of the 7th AAAI-Sponsored Banff Knowledge Acquisition for Knowledge-Based Systems Workshop Banff, Canada, October 11-16, 1992.
65. T.J. Menzies. Concerning the user of procedural construct as a knowledge acquisition technique. In IJCAI ’91 Knowledge Acquisition Workshop, 1991.
66. P. Compton, G. Edwards, B. Kang, L. Lazarus, R. Malor, T. Menzies, P. Preston, A. Srinivasan, and C. Sammut. Ripple down rules: possibilities and limitations. In 6th Banff AAAI Knowledge Acquisition for Knowledge Based Systems, 1991
67. T. Menzies. Applictions of computational intelligence to quantitative software engineering, 2001. Available from http://menzies.us/pdf/01quase.pdf.
68. T.J. Menzies. Qualitative causal diagrams for requirements engineering. In The Second Australian Workshop on Requirements Engineering (AWRE’97), 1997. Available from http://menzies. us/pdf/97awre.pdf.
69. T. J. Menzies. Applications of abduction: Intelligent decision support systems. In Proceedings of the Melbourne Workshop on Intelligent Decision Support. Department of Information Systems, Monash University, Melbourne, 1996. Available from http://menzies.us/pdf/95idss.pdf.
70. T.J. Menzies. Applications of abduction #1: Intelligent decision support systems. In Proceedings of the Melbourne Workshop on Intelligent Decision Support Department of Information Systems Monash University, Caulfield Campus, Melbourne Monday, March 20, 1995, 1995. Available from http://menzies.us/pdf/95idss.pdf.

B. RESEARCH FUNDING

New for this year: $2,945K
Accepted:

- **NSF** **Mega-Transfer $499K**
- **NSF** **Workforce Empowerment $950K**
- **NSF** **Empirical SE for Computational Science $592K**
- **NSF** **Science of Vulnerability Detection $499K**
- **DARPA** **Sail-on v&v ai 70,000**
- **LAS (NSA)** **Fariness is a choce $164K**
- **Lexis Nexis** **Leverage (year2) $120K (gift)**
- **Facebook** **Good via construction $50K (gift)**

start	finish	Funding body	Name	gift?	grant: sole PI	co-PI (expended by TM:)	Resaerch expenditure	Grants-Co-PI (total)	Research expenditure	current?	new for Feb2019-febl2020
2019	2022	NSF	Mega-Transfer				499,371		$499,371	yes	yes
2019	2020	Darpa	sail-on v&v ai				70,000		$70,000	yes	yes
2020	2020	LAS (NSA)	fariness is a choce				164,000		$164,000	yes	yes
2019	2020	NSF	Workforce Empowerment				98,000		$950,139	yes	yes
2019	2020	Lexis Nexis	Leverage (year2)				120,000		$120,000	yes	yes
2019	2020	Facebook	Good via construction				50,000		$50,000	yes	yes
2019	2022	NSF	Empirical SE for Computational Science				592,129		$592,129	yes	yes
2019	2022	NSF	Science of Vulnerability Detection			249,999	249,999	249,999	$499,387	yes	yes
2018	2018	Lexis Nexis (Atlanta)	Entiry recognition	y	$40,000		40,000		$40,000		
2018	2018	IBM	Analytics: SE faculty award	y	$40,000		40,000		$40,000		
2019	2019	LAS (NSA)	How safe is this conclusion		$50,000		50,000		$50,000		
2018	2019	Lexis Nexis (Raleigh)	configure cloud + test cases	y	$110,000		110,000		$110,000		
2018	20119	NSF	Empirical SE for Computational Science		$124,600		124,600		$124,600		
2018	2018	LAS (NSA)	How to make a magican		$35,000		35,000		$35,000		
2017	2021	NSF	Autotuning		$0	$450,000	450,000	$450,000	$900,000		
2017	2017	IBM	Automated SE: Faculty grant	y	$40,000		40,000		$40,000		
2015	2018	Lexis Nexis (Raleigh)		y	$120,000		120,000		$120,000		
2017	2017	Lexis Nexis (Atlanta)	Validation lab	y	$35,000		35,000		$35,000		
2017	2017	Lexis Nexis (Atlanta)	**The agreement machine**	y	$35,000		35,000		$35,000		
2017	2017	LAS (NSA)	**Privitized data sharing**		$35,000		35,000		$35,000		
2016	2016	IBM	Automated SE: Faculty grant	y	$40,000	$0	40,000	$0	$40,000		
2016	2018	NSF	Reu: Science of Software			$10,000	10,000	$345,365	$355,365		
2016	2016	Lexis Nexis	Optimization of ML for Big Data	y	$50,000	$0	50,000	$0	$50,000		
2016	2016	SEI	Optimization business process		$75,000	$0	75,000	$0	$75,000		
2015	2017	NCDSA	Share Care Beware		$60,000	$0	60,000	$0	$60,000		
2015	2018	Lexis Nexis	Validation lab	y	$120,000		120,000		$120,000		
2015	2015	JPL	Effort Estimation (year2)		$30,000		30,000		$30,000		
2014	2015	Lexis Nexis	Scripting for Big data	y	$50,000		50,000		$50,000		
2013	2017	NSF	Transfer Learning in SE			622,030	622,030	529,773	$1,151,803		
2013	2014	NASA (JPL)	Effort estimation		47,000		47,000		$47,000		
2012	2016	USDA	Early Childhood Obesity Program		$133,526		$133,526		$133,526		
2012	2013	NSF	New directions in AI and SE		$14,700		$14,700		$14,700		
2010	2012	Dod STTRv)	Active Learning		$230,514		$230,514		$230,514		
2010	2014	NSF (CISE)	Better Understanding of SE data			$249,500	$249,500	$499,000	$748,500		
2010	2012	Qatar Resarch	Int Center of Excellence in SE			$98,125	$98,125	$196,250	$294,375		
2010	2011	CITRE	Border Crossing		$70,000		$70,000		$70,000		
2010	2011	National Forensics	Overcoming Brittleness		$35,721		$35,721		$35,721		
2009	2010	National Archives	STEP Research			$209,000	$209,000	$418,000	$627,000		
2008	2009	National archives	STEP research			$143,500	$143,500	$574,000	$717,500		
2008	2011	NSF (CISE)	Automatic Quality Assessment			$180,000	$180,000	$360,000	$540,000		
2008	2009	National Forensics	Conclusion stability		$80,000		$80,000		$80,000		
2008	2008	NASA	Understanding Anomalies.		$58,000		$58,000		$58,000		
2008	2008	NASA	Crystal Ball.		$55,000		$55,000		$55,000		
2008	2008	NASA	Advanced UML modeling.		$50,000		$50,000		$50,000		
2007	2008	NASA	Applied Technology Lab		$95,551		$95,551		$95,551		
2007	2008	Dod STTRv	Next generation metrics: phase 1		$40,715		$40,715		$40,715		
2007	2007	NASA	WVU Liaison		$39,707		$39,707		$39,707		
2007	2008	Industrial	Analysis metrics (Galaxy Global)		$25,000		$25,000		$25,000		
2007	2008	National archives	STEP research		$15,482		$15,482		$15,482		
2006	2007	NASA	Learning software process model		$113,255		$113,255		$113,255		
2006	2007	NASA	Improving IV&V Techniques		$107,990		$107,990		$107,990		
2006	2006	NASA	co-op agreement supplemental funds			$14,916	$14,916	$59,665	$74,581		
2006	2006	NASA	co-op funds for Eisland Hall Lab		$30,000		$30,000		$30,000		
			sum since tenure (2006+)		$2,331,761	$2,227,070	$6,152,331	$3,682,052	$10,685,911		
2005	2005	NASA	How to Argue Less:		$260,000		$260,000		$260,000		
2005	2005	NASA	Spectrum of Model Checking Methods		$160,000		$160,000		$160,000		
2005	2005	NASA	Risk/Cost models for Autonomy		$160,000		$160,000		$160,000		
2005	2005	NASA	How much will it cost?		$126,161		$126,161		$126,161		
2005	2005	NASA SBIT	Intelligent Vehicle Health Management:		$65,000		$65,000		$65,000		
2004	2004	NASA	Spectrum of Model Checking Methods		$160,000		$160,000		$160,000		
2004	2005	NASA	A next-generation testable language		$70,000		$70,000		$70,000		
2004	2004	NASA	The research rover		$48,000		$48,000		$48,000		
2003	2005	NASA	Understanding models better		$107,000		$107,000		$107,000		
2003	2003	NASA	Model checking & procedural languages		$50,000		$50,000		$50,000		
2003	2003	NASA	See more! Learn more! Tell more!		$47,800		$47,800		$47,800		
2002	2003	NASA	A spectrum of IV&V techniques		$200,000		$200,000		$200,000		
2002	2002	NASA	Better risk modelling		$29,000		$29,000		$29,000		
2001	2001	NASA	Tree query languages		$29,000		$29,000		$29,000		
2000	2000	Canada Res. Coun.	NSERC grant		$83,000		$83,000		$83,000		
1998	1999	NASA	High Quality Knowledge Initiative		$110,000		$110,000		$110,000		
1997	1998	Aust. Res. Coun	Abduction for software engineering		$10,000		$10,000		$10,000		
1996	1998	UNSW	Vice-Chancellor's Research Fellowship		$135,000		$135,000		$135,000		
			Total (1996 to 2005)		$1,849,961	$0	$1,849,961	$0	$1,849,961		
			Total (ALL)		$4,181,722	$2,227,070	$8,002,292	$3,682,052	$12,535,872		

External Funding						
2015-0916	Provide Support in Developing Cost estimating models for the NASA Software CER Development Task	Menzies, Timothy James	Computer Science	Jet Propulsion Laboratory (Prime - National Aeronautics & Space Administration (NASA))	$28,500	04/10/2015 through 01/31/2016
2015-0943	SHF:Medium:Collaborative:Transfer Learning in Software Engineering	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$464,609	08/02/2014 through 06/30/2018
2015-3234	Share, Care, Beware : Trusted Sharing Practices for Data Science	Menzies, Timothy James	Computer Science	North Carolina Data Science and Analytics Initiative (NCDSA)	$73,225	07/01/2016 through 06/30/2017
2016-0911	Enabling Evidence-Based Modernization	Menzies, Timothy James	Computer Science	Carnegie Mellon University (Prime - US Air Force (USAF))	$70,000	01/13/2016 through 10/31/2016
2016-1412	REU Site: Science of Software	Parnin, Christopher Joseph Menzies, Timothy James Heckman, Sarah Smith Murphy-Hill, Emerson R	Computer Science	National Science Foundation (NSF)	$355,365	02/01/2016 through 01/31/2020
2017-1060	SHF:Medium:Scalable Holistic Autotuning for Software Analytics	Menzies, Timothy James Shen, Xipeng	Computer Science	National Science Foundation (NSF)	$898,349	07/01/2017 through 06/30/2021
2018-1797	EAGER: Empirical Software ENGINEERING for Computational Science	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$124,628	05/01/2018 through 07/31/2019
2019-1209	SHF:Small: Mega Transfer: On the Value of Learning from 10,000+ Software Projects	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$472,024	10/01/2019 through 09/30/2022
2019-1222	SHF: Small: Detecting the 1%: Growing the Science of Vulnerability Detection	Williams, Laurie A. Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$499,998	10/01/2019 through 09/30/2022
2019-2487	Elements: Can Empirical SE be Adapted to Computational Science?	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$592,129	10/01/2019 through 09/30/2022
2019-2990	Convergence Accelerator Phase I (RAISE): Developing Intelligent Tech. for Workforce Empowerment: Credential Gap Diagnostics and Personalized Recommenders for Jobs and Retraining	Ding, Huiling Chi, Min Shen, Xipeng Menzies, Timothy James Fang, Xiaolei	English	National Science Foundation (NSF)	$985,485	09/01/2019 through 05/31/2020
Total external funding: $4,564,312						

Internal Funding						
2017-1422	LAS DO7 Menzies - 3.4 Cybersecurity Second Order Effects	Menzies, Timothy James	Computer Science	Laboratory for Analytic Sciences	$186,809	01/01/2017 through 12/31/2018
2019-1060	LAS DO1 Menzies - 2.4 Analytics, AI and Machine Learning	Menzies, Timothy James	Computer Science	Laboratory for Analytic Sciences	$181,110	01/17/2019 through 12/31/2020
Total internal funding: $367,919						

Pending Proposals (including pre-proposals)					
2019-2049	Artificial Intelligence Fighting Against Cyberattacks: Instant Prevention of Software Vulnerabilities	Menzies, Timothy James	Computer Science C&G	University of Wollongong (Prime - Australian Research Council)	$0
2019-2780	FAI: Fairness is a Choice (and Not Choosing is Unfair)	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$705,216
2020-0074	Ethics and Safety of Systems of Autonomous, Intelligent Agents in Society	Singh, Munindar P. Roberts, David L Doyle, Jon Wilson, Mark A. Struett, Michael Mayer, Roger Dutta, Rudra Desmarais, Sarah Dubljevic, Veljko Bauer, William A. Menzies, Timothy James Bardaka, Eleni Nam, Chang S Chen, Crystal Gillan, Douglas J Ding, Huiling Williams, Laurie A. Das, Anupam Bozkurt, Alper Yusuf Barbee, Lindsey McGowen List, George F.	Computer Science	National Science Foundation (NSF)	$2
2020-0238	LR2: Ultra-fast Novelty Recognition and Repair for Deep Learning	Menzies, Timothy James	Computer Science	Quantum Ventura Inc. (Prime - Defense Advanced Research Projects Agency (DARPA))	$72,675
Total of pending proposals: $777,893					

Non-funded Projects					
2015-1051	CI-NEW: Next Generation Open Science Research for Software Engineering	Menzies, Timothy James Murphy-Hill, Emerson R	Computer Science	National Science Foundation (NSF)	$793,842
2015-1394	CPS: Synergy: Collaborative Research: Real Time Attack Monitoring and Control for Cyber Physical Security of Power Grid	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$179,151
2015-1562	SHF: Small: Smarter Software Autotuning for SE Data Analytics	Menzies, Timothy James Shen, Xipeng	Computer Science	National Science Foundation (NSF)	$498,524
2015-1565	SHF:Small:Collaborative: Changing Software to Reduce Defects	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$249,594
2016-0702	SHF:Medium:Holistic Scalable Autotuning for Software Engineer Data Analytics	Menzies, Timothy James Shen, Xipeng	Computer Science	National Science Foundation (NSF)	$1,200,000
2016-0738	SHF:Medium:Collaborative Research: Changing Software to Reduce Defects	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$740,607
2016-0934	Verifying Safety of NextGen Models: A Rational Approach	Menzies, Timothy James	Computer Science	National Aeronautics & Space Administration (NASA)	$0
2016-1357	TWC: Small: On the Practical Use of Attack Surfaces Find Reachable Code Vulnerabilities	Williams, Laurie A. Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$499,948
2017-1061	SHF: MEDIUM: Is There Wisdom in the (Qualified) Crowd?	Stolee, Kathryn Thomasset Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$1,199,261
2017-1445	SaTC: Core: Small: Are Vulnerability Prediction Models Possible for Practical Use?	Williams, Laurie A. Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$499,486
2018-0729	SHF: Medium: Better Software Analytics by Combining Human and Artificial Intelligence	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$905,037
2018-1293	SHF: Small: Jumpstarting Next Generation Vulnerability Prediction Models	Menzies, Timothy James Williams, Laurie A.	Computer Science	National Science Foundation (NSF)	$499,857
2019-2050	CCRI:Medium:Collaborative Research:SAInT: Bridging the Gap from Research to Practical Advice	Menzies, Timothy James	Computer Science	National Science Foundation (NSF)	$718,159
Total of non-funded proposals: $7,983,466					

Miscellaneous Activities
Total miscellaneous activity funding: $0

IV. EXTENSION AND ENGAGEMENT WITH CONSTITUENCIES OUTSIDE THE UNIVERSITY

- Lexis Nexis: test case prioritization , Raleigh campus
- Lexis Nexis: cloud configuration, Raleigh campus
- Lexis Nexis: test case prioritization, Raleigh campus
- IBM, data mining work with research triangle. Faculty award 2017.
- IBM, data mining work with research triangle. Faculty award 2016.
- Lexis Nexis, text mining work, 2015, 2016, 2017
- Jet Propulsion Lab, effort estimation research. 2002 to present. Funded research 2007, 20014 to 2015
- Microsoft Research, research projects, February 2011 to 2012 to present
- NASA, Software Engineering Research Chair, 2001 to 2003
- NASA Effort Estimation research, 2004 to 2015
- Consultant, Object-oriented programming, 1988- 1995
- Consultant, Expert systems, 1985-1988

V. TECHNOLOGICAL AND MANAGERIAL INNOVATION

A. TECHNOLOGY TRANSFER

Workshop Organizer/Facilitator:

- RAISE pc-chair 2019
- ROSE festival organizer (DSE'18, ICSE'19)
- FSE'18 artifacts chair
- **SSBSE co-PC chair, 2017**
- **FSE SWAN workshop, co-chair, 2017**
- Artifacts track, FSE'16
- Artifacts track, ICMSE, 16
- Big Data for SE, ICSE'16 workshop
- Actionable Analytics, ASE'15 workshop
- Big Data for SE, ICSE'15 workshop
- RAISE'14 (Realizing AI Synergies with Software Engineering),, an ICSE 2014 workshop/
- Dagstuhl Seminar, Software Development Analytics, 2014
  (co-organized with Laurie Williams and Tom Zimmermann).

Tutorial Presenter/Organizer:

- ICSE 2016 Technical Briefing: How not to do it, Anti-Patterns in Data Analysis.
- ICSE 2015 Technical Briefing: Art and Science of Analyzing Software Data (Quantitative Methods)
- ICSE 2014 Tutorial: Art and Science of Analyzing Software data
- ICSE 2013 Tutorial: Data Science for Software Engineering
- ICSE 2012 Tutorial: Understanding Machine Learning for Empirical Software Engineering
- June 2010: Data Mining summer school, Queens University, Kingston, Canada (http://goo.gl/oMcSX);
- Sept2010:LASERsummerschoolonempiricalsoftwareengineering,Elba,Italy(http://goo.gl/4lwDu).
- Feb 2010: Invited speaker, Microsoft, Empirical SE, version 2.0
- Sept 2008: Invited Speaker, Google, Defect Prediction

B. IMPACT

Here is the text of my 2018 IEEE Fellow application (which was successful).

Internationally known for revolutionary advances exploring the synergy between artificial intelligence (AI) and software engineering (SE), Dr. Menzies has authored four books and over 260 refereed publications. His publications, with over 9000 citations, have appeared in leading journals and proceedings of prestigious conferences. He has supervised seven students earning PhDs and 23 MS thesis students. Dr. Menzies' distinctive contributions have had enormous impact for SE researchers and practitioners in software quality prediction and software optimization.

SOFTWARE QUALITY PREDICTION

Because software plays a critical role in industry, government, and society itself, improving software quality is critical. In landmark papers in 2006 and 2007, Dr. Menzies was an early pioneer in applying data mining and AI to software quality predictors, introducing a method which identified software modules likely to contain defects. This method had a 71 percent mean probability of defect detection, significantly higher than the code inspections commonly used in software practice.

In his software quality prediction research, Dr. Menzies identified a serious problem: often, the analysis in SE papers is not reproducible because data underlying the analysis is unavailable. To address this problem, Dr. Menzies developed PROMISE, a public data repository of software data, in 2005 publishing a paper introducing PROMISE and co-founding the PROMISE workshop, so successful it became a conference in 2008. Today, the PROMISE repository contains hundreds of data sets used in thousands of papers by researchers around the world.

OPTIMIZATION OF SOFTWARE-INTENSIVE SYSTEMS

Dr. Menzies is a pioneer in applying data miners to optimize software-intensive systems. In 2002, he discovered that analyzing such systems with data miners augmented with genetic algorithms led to faster analysis and better optimizations. Even for systems with millions of configuration options, Dr. Menzies' optimizers quickly learn how to make code run quicker, make

web servers handle more traffic, and compile programs faster. Dr. Menzies' optimizers have been applied at NASA for reasoning about safety-critical aerospace software.

Dr. Menzies has also applied his optimization techniques to understand the unstructured textual components of software artifacts and software research papers. His was one of the earliest successful efforts applying text mining and AI to the notes of software test engineers. By identifying anomalous reports that required a second opinion, he could increase assurance of NASA systems while reducing the overall effort required to achieve that assurance. Recently, he has designed tools that can review 10,000s of papers to learn the structure of the SE scientific community. These tools can guide researchers and practitioners to find relevant work that might otherwise be overlooked.

Dr. Menzies' contributions to SE and AI are widely recognized. For his research, in 2017, Dr. Menzies received the MSR (Mining Software Repositories) Foundational Contribution Award as "Recognition of fundamental contributions in the field of data mining software repositories which helped others advance the state of the art." International databases of scholarly achievement rank Dr. Menzies number three world- wide both in software analytics and in SE and data mining. Recently, Dr. Menzies clustered 35,000 papers from the last 25 years of top-SE journals and conferences. In the "software metrics" cluster, Dr. Menzies is the top-ranked author. In the papers from top-ranked venues, Dr. Menzies' h-index of 48 places him number 11 overall.

Dr. Menzies' contributions have had world-wide impact in software practice. In 2005, Turkish researchers found that when commercial teams restricted code inspections to 25 percent of the files identified by Dr. Menzies' methods, they detected 88 percent of the existing code defects. In 2005, his students commercialized his defect detection methods in the Predictive tool suite, subsequently purchased by companies such as Chevron, Northrop Grumman, LogLogic, Inc., and Compagnie Financière Alcatel, to find code defects. In 2017, the US Software Engineering Institute used Dr. Menzies' optimizers to guide discussions about costly updates to Department of Defense software.

NASA has benefited enormously from Dr. Menzies' research. In 2005, as science chair at a NASA facility, he received a commendation award from NASA's Chief of Mission Assurance saying: "...A great researcher in his own right, ...Tim has raised the bar on quality and level of work [expected] from our researchers." NASA used his algorithms in 2008 to find violations in Space Shuttle launch requirements; in 2010, to quickly explore the design of next-generation new Air Traffic Management concepts; and in 2017 to find better monitoring strategies for pilots flying planes in safety-critical situations. In 2016, based on Dr. Menzies' research, NASA's Jet Propulsion Laboratory created the NASA Analogy Software Cost Model as its official tool for predicting software development costs.

Evidence of Technical Accomplishment

- Tim Menzies, Jeremy Greenwald, Art Frank, "Data mining static code attributes to learn defect predictors," IEEE Transactions on Software Engineering, Vol. 33 (1), 2-13, 2007. Dr. Menzies is a pioneer in the development of predictors of software quality learned from data miners. A notable finding of this paper is that Dr. Menzies' methods (including decision trees and Bayesian learning) have a 71 percent mean probability of defect detection--a rate significantly higher than human manual inspections. The paper, with more than 920 Google Scholar citations, is one of the 100 most cited papers in software engineering. Moreover, nine of the 50 most cited papers in the IEEE Transactions on SE (2012-2017) use methods and/or data from the databases used by this paper. Methods for software defect prediction introduced in the paper have been applied commercially around the world. In this paper, Dr. Menzies was the lead researcher —he defined the problem, the technical approach, and designed and coded all of the experiments.
- Martin S. Feather and Tim Menzies, "Converging on the optimal attainment of requirements," Proceedings, IEEE Joint International Conference on Requirements Engineering, 2002. Although optimization methods for numerical systems have been used widely, applying these methods is often ineffective in complex software systems where each "if" statement divides the software into regions with different properties. For software, Dr. Menzies found that applying non-numeric optimizers, e.g., simulated annealing or genetic algorithms, is effective. This paper is the first of its kind to reason about solutions to software requirement problems on the Pareto frontier. As witnessed by many papers in the last two years, this method is now widely used by researchers in the software requirements community. For this paper, Dr. Menzies led the AI-part of the research, and designed and implemented the AI algorithm used in the analysis.
- Tim Menzies, Andrian Marcus, "Automated severity assessment of software defect reports," IEEE International Conference on Software Maintenance," 2008. This paper, with over 185 citations, describes one of the earliest successful efforts applying text mining methods to the notes of software test engineers. The method introduced in the paper identifies anomalous reports requiring a second opinion, thus increasing software quality assurance while

reducing the overall effort required to achieve that assurance. For this work, Dr. Menzies was the lead researcher, defining the overall vision of the paper, as well as building the tools and running all of the experiments.

Natural Language Understanding

- Zhe Yu, Nicholas Kraft, Tim Menzies “Finding Better Active Learners for Faster Literature Reviews”. Empirical SE Journal, to appear 2018. This is the first SE application using incremental text mining methods to learn what a reader wants to read. Dr. Menzies showed that a) supposed state-of-the-art text miners from other domains perform poorly for SE, and b) a new method called FASTREAD can quickly guide researchers and practitioners to relevant work that might otherwise be overlooked. Achieving Generalizability in Software Engineering Research
- Burak Turhan, Tim Menzies, Ayse Basar Bener, Justin S. Di Stefano, "On the relative value of cross-company and within-company data for defect prediction," Empirical SE, vol. 38(6), 1403-1416, 2012. This paper shows that useful models for a project can be built by carefully selecting the most relevant examples from other projects. The paper, with more than 180 citations, is one of the five most cited articles of all time in the Empirical SE journal.

Adjusting Learners to Human Needs

- Abdel Salam Sayyad, Tim Menzies, and Hany Ammar, "On the value of user preferences in search-based software engineering: A case study in software product lines", International Conference on Software Engineering, 2013. This paper (134 citations) shows that while most, but not all, optimizers used in software engineering are highly insensitive to complex sets of user preferences, for complex requirements problems, goal-aware reasoning can achieve much better results than standard optimizers used in software engineering.
- Abdel Salam Sayyad, Joseph Ingram, Tim Menzies, Hany Ammar, "Scalable product line configuration: A straw to break the camel's back". Automated Software Engineering Conference, 2013. This paper (86 citations.), which extends the previous paper, is one of the five most cited papers in the IEEE Automated Software Engineering Conference in the last five years. By exploiting the richness of human preferences, the method introduced in this paper can extract usable designs from a space of thousands of goals and hundreds of thousands of constraints. Learning Using Many Opinions
- E Kocaguneli, Tim Menzies, JW Keung, "On the value of ensemble effort estimation," IEEE Transactions on Software Engineering, Vol. 38(6), 1403-1416, 2012. Even though ensemble techniques are widely applied in other domains, they are rarely used in SE. This paper (140 citations) showed that any single predictor was less trustworthy than using twelve elite models implemented from an ensemble of 90 learners.

Uncovering Errors in Data Mining

- Tim Menzies, Alex Dekhtyar, Justin Di Stefano, Jeremy Greenwald, "Problems with precision" IEEE Trans SE, 2007. In this paper (155 citations), Dr. Menzies describes a previously undocumented, subtle, and dangerous aspect of precision in a widely-used performance measure. Curiously, this problem had not been previously reported despite the measure's widespread use.

Better Optimizers Using Data Miners

- Tim Menzies, Zach Milton, Burak Turhan, Bojan Cukic, Yue Jiang, Ayse Basar Bener, "Defect prediction from static code features: Current results, limitations, new approaches". Automated Software Engineering, 2010. This paper (197 citations) introduces "WHICH" a meta-learner framework that can be quickly customized for different business goals. Measured in terms of specific user goals, WHICH performs better that many standard learners. Human-Understandable Data Mining Results
- Tim Menzies, Ying Hu, "Data mining for very busy people", IEEE Computer, Vol. 36(11), 2003. Cognitive scientists and researchers studying human decision-making note that humans often use simple models rather than complex ones. This paper (132 citations) describes Dr. Menzies' TAR2 data miner which generates tiny human-readable models, useful for describing to humans many seemingly complex software engineering problems.

VI. SERVICE TO THE UNIVERSITY AND PROFESSIONAL SOCIETIES

A. UNIVERSITY SERVICE

- Chair, Search committee, SE faculty, 2019
- Member, CSC Graduate Program Oversight Committee. 2016-present
- Member, Strategic Planning Committee, 2016-
- Member search committees, CSC, 2016
- Worked on the graduate recruiting weekend, March 2017.
- Member, University faculty scholars review committee (Sept 8, 2017).
- Volunteer, Open Day, March 2015
- Speaker, Graduate research seminar series (CS), November '14

B. NATIONAL AND INTERNATIONAL SERVICE

- Editorial Board
  - IE Software journal
  - Journal of Software Systems, 2016-
  - Big Data Research, 2016 -present
  - Software Quality Journal, 2016- present
  - Information Software Technology, 2016-present
  - Empirical Software Engineering International Journal, 2009-present
  - Automated Software Engineering journal (2010 – present)
  - Transactions Software Methodologies
- Associate Editor
  - IEEE Transactions on Software Engineering, 2011-2017
- General Chair
  - IEEE International Conference Software Maintenance and Evolution, 2016
- Program Chair/Co-Chair:
  - RAISE 2019 PC-chair
  - **PROMISE 2020 PC-chair**
  - ROSE organizer ICSE'19 FSE'18
  - Symposium Search-Based Software Engineering, 2017
  - International Conference on Software Engineering, New and Emerging Ideas Track (2015) Florence, Italy.
  - IEEE Automated Software engineering, 2012, Essen, Germany
  - PROMISE conference on repeatable experiments in software engineering (2005-2010)
- Steering Committee Member
  - IEEE Automated Software engineering, 2012-
  - PROMISE conference on repeatable experiments in software engineering (2006-2012)
- Doctoral Symposium
  - Chair, IEEE Automated Software engineering, 2011, Lawrence, Kansas
- Research Proposal Panel
  - National Science Foundation, US (2002, 2004, 2005, 2007, 2009, 2011, 2012, 2007, 2008, 2009, 2010, 2011, 2012, 2012, 2014,2015)
- Guest Editor:
  - (2018) Automated Software Engineering special issue best papers ASE2017
  - (2017) IEEE Software, special issue on Actionable Analytics
  - (2017) Empirical Software Engineering journal, special issue, Big Data and SE
  - (2017) Automated software Engineering journal, Special issue on Next Generation Search-based SE
  - (2016) Automated Software Journal, Best papers RAISE'15
  - (2015): Automated Software Journal, Best papers, ASE conference, 2011-2012
  - (2015) Special issue, best papers from RAISE'13, Automated Software Engineering
  - (2013) Two special issues, IEEE Software, Software Analytics (with Thomas Zimmermann).
  - (2013) Special Issues, Information and Software Technology, Best papers from PROMISE'11, 55(8),.
  - (2013): Special Issue, Empirical Software Engineering, Best papers, PROMISE'10, 18(3) 2013
  - (2012) Special Issue, Automated Software Engineering, "Learning to Organize Testing", 19(2), 2012.
  - (2012): Special Issue, Empirical Software Engineering, Jan 2012, "Conclusion Stability in SE"
  - (2012): Special Issue, Best papers RAISE 2012, Software Quality Journal
  - (2010): Special issue: Automated Software Engineering, Repeatable Experiments in Effort Estimation",;
  - (2009): Special issue: Journal of Empirical Software Engineering, ' "IR for Program Comprehension", 2009;

- (2008) :Special issue: Journal of Empirical Software Engineering, ‘ “Repeatable Experiments in SE”,
- (2003) :Special issue, Requirements Engineering Journal, "Model-based requirements engineering
- (2003): Special issue of IEEE Intelligent Systems, "AI’s Second Century", 2003.
- (1999, 1998): Two special issues of International Journal of Human Computer Studies (IJHCS),

- General chair
  - ICSME’16
  - BigDSE’16, BigBDSE’15
- Senior roles in conference organization:
  - Artifacts chair, FSE’18
  - Data challenge, RE’18
  - PC-chair: SSBSE 2017,
  - Co-PC chair FSE SWAN 2017
  - Artifacts chair: FSE 2016
  - Artifacts chair: ICSME 2016
- Program Committee:
  - 2019:
    - IEEE Fellow award committee (for 2020).
    - ICSE,18, Msr award committees 2019,
  - 2018:
    - ICSE,18, Msr award committees 2018, SSBSE’18, ESEM 2018
  - 2017:
    - SoftwareMining’17, ICSE’17 (artifacts), PROMISE’18, MSR’18, ESEM’18, SPLC’17, EASE’17
  - 2016:
    - ASE’16, BIGDSE’16, EASE 2016, ESEM2016, ICSE-SRC 2016, ISSRE 2016, PROMISE 2016, RAISE 2016, SSBSE’16, SCORE 2016
  - 2015:
    - Ase'15, BigDSE'15, Ease'15, EsPreSSE'15, Esem'15, Fse'15, Gecco'15, Icpc'15, Issre'15, Msr'15, NasBase'15, Promise'15, Raise'15, Ssbse'15
  - 2014:
    - MSR’14, ICSE14-demos, ICSE14-mainConference, DAPSE’14, EASE’14, GTSE’14, SAM 2014, SEAA 2014,
  - Before 2014:
    - Mining Software Engineering 2013, 2012, ‘2011
    - IEEE Automated Software Engineering (2013,2012,2011,2010,2009, 2008,2007,2005, 2004, 2003, 2002)
    - Empirical Software Engineering and Measurement ‘2012 ’2011, 2013
    - SAM2103,
    - DAPSE’13
    - ICSE’13: demos
    - ASE-Tools’13
    - ISSRE’13
    - GTSE’13
    - MALIR’13
    - Software Mining -2012, 2013
    - RAISE’12, RAISE’13
    - FSE New ideas’11,
    - Software engineering week, 2011,
    - Spark’11
    - IEEE International Symposium on Software Reliability Engineering (2010,2009);
    - Pacific Knowledge Acquisition Workshop, 2009,2008
    - LSO (learning software organizations), 2008
    - Traceability in Emerging forms of SE , 2007
    - International Workshop on Living with Uncertainty (2007)
    - IEEE conference on high assurance software engineering (2007, 2004);
    - 17th International Conference on Automated Planning & Scheduling (2007)
    - MoChArt ’05 (model checking and AI)
    - Tim Menzies, vita page 7 of 23
    - IEEE NASA Software Engineering Workshop (2003)

        - IEEE Metrics 2003;
        - Numerous other PCs since 1991 including
            - 8 international conferences
            - 16 international workshops,
            - 5 Australian national workshops.
            - Organizing committee member for 2 international workshops, 4 national conferences and workshops.

- Reviewer for:
    - ACM Transactions on Software Engineering and Methodology, IEEE Transactions on Software Engineering, Empirical Software Engineering, Automate Software Engineering, Information Systems and Technology, Applied Soft Computing, IEEE Software, International Journal of Human Computer Studies. Software Quality Journal, Software Process: Improvement and Practice Journal, Software Testing, Verification, and Reliability , IEEE Transactions on Evolutionary Computation