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, 185.

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.
- June 1996 to June 1998: Vice- Chancellor's Research Fellow**,** University of New South Wales,
- February 1995 to June 1996: Assistant professor, Monash University, Australia

3. Scholarly and creative activities:

Books	*Career*	*Post Tenure*	*Current Year*
Authored books	0	0	0
Edited books and Proceedings	4	1	0
Refereed book chapters	12	2	2

Papers, Articles, Patents, Reports, etc.	*Career*	*Post Tenure*	*Current Year*	*Submitted*
Refereed journal articles	62	17	5	1
Refereed magazine articles	0	0	0	0
Other magazine articles	0	0	0	0
Refereed conference papers	106	14	0	2
Refereed workshop papers	0	0	0	0
Refereed panel papers	0	0	0	0
Refereed posters/fast abstract	0	0	0	0
Technical reports	4	0	0	0
Refereed tutorials	4	4	2	0
Course pack (with ISBN)	0	0	0	0
News interviews	4	2	0	0

Talks, Presentations	*Career*	*Post Tenure*	*Current Year*
Keynotes and distinguished speaker	5	2	0
Other invited talks	0	0	0

Funded Research, Development and Teaching	*Career*	*Post Tenure*	*Current Year*
Contracts and Grants	$7,315,081	$1,412,329	$80,000
Gifts (cash)	0	$50,000	0
Gifts (in kind)	0	0	0
Other: PhD Fellowships	0	0	0

Mentoring and Supervision (see CV for details)	*Career*	*Post Tenure*	*Current Year*
PhD (chair/co-chair), graduated	8	4	0
PhD (chair/co-chair), current	-	-	2
MS (chair/co-chair), graduated	23	3	0
MS (chair/co-chair), current	-	-	2
Undergraduate advisees, graduated	4	2	2
Faculty mentored	0	0	0

Courses taught	*Career*	*Post Tenure*	*Current Year*
Regular undergraduate (3 credits, 10< x < 100 students)	20	3	0
Large undergraduate (3 credits, x > 100 students)	2	0	0
Regular graduate (3 credits, 10 < x < 100 students)	11	4	2

Courses created and/or revised in a significant way	*Career*	*Post Tenure*	*Current Year*
Undergraduate	4	0	0
Graduate	6	2	2

Other	*Career*	*Post Tenure*	*Current Year*
Development of Software Packages	5	2	1
Creation/Direction of Dept. Facilities – Labs & Centers	2	0	0
Major awards and recognitions	0	0	0
Major off-campus services	0	0	0

4. Membership in professional organizations:
- Association for Computing Machinery (ACM), 1996-present
- Institute of Electrical and Electronic Engineers (IEEE), 1997-present

5. Scholarly and professional honors:
- **Distinguished reviewer, ACM Transactions on SE Methodologies, 2015**
- WVU College of Engineering, Outstanding Researcher, 2010
- NASA Commendation for Chief of Mission Assurance, 2004

6. Professional service on campus:
- **NCstate Member , Software Engineering Faculty Search (2014)**
- **NcState, Open house weekend (March 2015)**
- **Curating the PROMISE repository of SE data**
- WVU, 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):
- **Co-General Chair: International Conference on Software Maintenance and Evolution 2016**
- Co-Program Chair: **ICSE NIER'15**, ASE'12.
- Associate Editor: IEEE Transactions on Software Engineering 2011-present.
- Editorial Board: Empirical Software Engineering International Journal, 2009-present; Automated Software Engineering Journal, 2010-present
- Steering Committee Member: IEEE Conference on Automated Software Engineering (2012-present); PROMISE conference 2005-2012.
- PC member: Currently: **Icse'16, 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

Computer Science students rate the effectiveness of their teachers each semester on a 1-5 scale where 1 is poor and 5 is outstanding. Evaluations for the last three years are provided before the slash. Department averages are given after the slash.

- Due to my recent arrival at NcState (August 2015), this table is very short and just includes my one Fall'14 class.
- If the mid-term evaluations for my Spring '15 classes become available prior to submitting this document, they will be added also.
- As to the older evaluations, my old university did not require data collection and retention on these precise questions.

Course (Enrollment)	**Semester**	**Instructor explained material well / Instructor was prepared well for class (#5)**	**Instructor was an effective teacher**	**Course improved my knowledge**	**Course was excellent**	Labs were effective learning experiences
CSC 791 001 (5 students[1]) [response rate 80%]	**Fall 2014**	**5/4.0***	**5/4.0***	**5/4.3**	**5.0/4.0**	N/a

* Denotes score above corresponding departmental average

[1] Results based on low response rates may not reflect the true class mean

Comments from CSC 791 001 included below:

Question	**Response**
Comment on strengths and weaknesses of the instructor	1. Strengths: The Instructor was well prepared and very enthusiastic. Weakness: I'm afraid I cannot think of any. 2. 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 3. Dr. Menzies has a lot of industry and research experience, who can give us more insights into optimization algorithms. Really good professor!
Comment on strengths and weaknesses of the course	1. Strength - An overall great course; learnt python inside out as a result 2. The course moves quickly and I found myself playing catch-up frequently; I always felt a week or two behind, despite putting more time into this course than any class up until this point in graduate school. Definitely the most difficult subject I've taken so far. I learned a lot and would do it again if given the choice. 3. 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. This is cutting edge stuff and is worth the trouble; Dr. Menzies did an excellent job explaining current research methodology *during the research process*, which I had not found in my courses to this point and filled in some knowledge gaps. 4. We learned a lot about the optimization algorithms during this semester and practiced python a lot. I like this course. It will be better to discuss SB-software engineering problems, how to solve those problem.

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 ubject
- 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
- Research methods (1995,1996), 4th year undergraduate subject

B. INSTRUCTIONAL DEVELOPMENT

- ***New course Search-based Software Engineering:*** **At NCstate 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

- Past Graduate Committee Membership: Dozens, at WVU
- Current Graduate Committee Membership (NcState): Pradeep Murukannaiah (Ph.D.), Nirav Ajmeri (Ph.D.).

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 + 25 MS):

Ph.D.:

1. Abdel Sayyad Ph.D. (2014, WVU) *Evolutionary Search Techniques with Strong Heuristics for Multi-Objective Feature Selection in Software Product Lines*
2. Joe Krall Ph.D. (2014, WVU) *Active Learning for Search-Based Software Engineering*
3. Fayola Peters Ph.D. (2014, WVU) *Privacy and Data Sharing*
4. Ekrem Ph.D. (2012, WVU) *A Principled Methodology: A Dozen Principles of Software Effort Estimation*
5. Nandeshwar, Ashutosh Ph.D. (2011, WVU) *Longitudinal study of first-time freshmen using data mining*
6. David Owen Ph.D. (2010, WVU) *Combining complementary formal verification strategies to improve performance and accuracy*
7. Scott Chen Ph.D. (2004, U.Sc.) *Data Mining for Effort Estimation*

Masters:

1. **Divya Ganesan MS (2015,WVU) Exploring Essential Content of Defect Prediction and Effort Estimation through Data Reduction**
2. **Ben Province MS (2015, WVU), *The Effects of Parameter Tuning on Machine Learning Performance in a Software Defect Prediction Context.***
3. Vasil Papakroni MS (2013, WVU) *Data Carving: Identifying and Removing Irrelevancies*
4. Joseph Craig MS (2013, WVU) *Accelerating MOEA Non-dominated Sorting by Preserving Archival Relationships*
   Will Burney MS (2012, WVU) *Understanding Search-Based Software Engineering*
5. Adam Brady MS (2011, WVU) *W2 : a simple, flexible, case-based recommendation engine for software quality*
6. Brian Lemon MS (2010, WVU) *The effect of locality based learning on software defect prediction*
7. Fayola Peters MS (2010, WVU) *CLIFF: finding prototypes for nearest neighbor algorithms with applications*
8. Andrew Matheny MS (2010, WVU) *Trade-offs of heuristic vs. rigorous algorithms in text mining*
9. Joe D'alessandro MS (2010, WVU) *Optimized trusted information sharing*
10. Grey Gay MS (2010, WVU) *The robust optimization of non-linear requirements models*
11. Adam Nelson MS (2010, WVU*) OURMINE: an open source data mining toolkit*
12. Ous El-waras MS (2008, WVU) *Software process control without calibration*
13. Omid Jalali MS (2008, WVU) *Evaluation bias in effort estimation*
14. Zach Milton MS (2008, WVU) *Which: a stochastic best-first search learner*
15. Brian Sower MS (2008, WVU) *Increasing the performance and realism of procedurally generated buildings*
16. Justin DiStefano MS (2008, WVU) *Building better software : the applicability of a professional tool for automa*
17. Daniel Baker MS (2007, WVU) *Hybrid approach to expert and model based effort estimation*
18. Donald Boland MS (2007, WVU) *Data discretization simplified: randomized binary search trees for data preprocessing*
19. Jeremy Greenwald MS (2006, Portland State) *Understanding procedural Knowledge*
20. Ryan Clark MS (2005, Portland State) *Optimizing Treatment Learning*
21. Kareem Ammar (2004, WVU) *Multi-heuristic theory assessment with iterative selection* [
22. Yi Hu MS (2003, University British Columbia) Treatment learning
23. Eliza Chaing MS (2003, University British Columbia) *Early LifeCycle Simulation of Software Process Models*.
24. David Owen MS (2002,WVU) *Combining complementary formal verification strategies to improve performance and accuracy*
25. John Powell MS (2001,WVU) *Graph theoretic approach to assessing tradeoffs on memory usage for model che*cking

Student working towards a degree (4 PhD, 1 Masters):

1. **Wei Fu, Ph.D.**
2. **Vivek Nair, Ph.D.**
3. **Rahul Krishna, Ph.D.**
4. **Jianfeng Chen**

1. **George Mathew, Masters**

III. SCHOLARSHIP IN THE REALMS OF FACULTY RESPONSIBILITY

A. SCHOLARLY ACCOMPLISHMENTS – PUBLICATIONS

Submitted Publications

1. **Joseph Krall, Tim Menzies, Misty Davies, GALE: Geometric Active Learning for Search-Based Software Engineering, IEEE Transactions on Software Engineering, Dec 2014 revision requested.**
2. **Menzies T., Nichols W., Layman L., Shull F., Pape C. Revisiting the Truisms of Software Engineering: Does Phase Delay Dramatically Increase Fix Time? Submitted to Foundations of Software Engineering (FSE) on March 7, 2015.**
3. **Menzies T., Yang Y., Mathew G., Boehm B., Hihn J. On the Value of Parametric Software Effort Estimation Submitted to Foundations of Software Engineering (FSE) on March 7, 2015.**

Invited and Contributed Research Presentations (All Invited)

1. **Keynote, ICSE'15 workshop keynote (WetSOM'14): What Metrics matter. Hyderabad, India.**
2. **Tutorial, ICSE'15: Art and Science of Analyzing Software Data**

Refereed Journal and Top Magazine Publications

1. **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**
2. **Transfer learning in effort estimation, E Kocaguneli, T Menzies, E Mendes Empirical Software Engineering, 1-31, 2014**
3. **SN Partington, V Papakroni, T Menzies , Optimizing data collection for public health decisions: a data mining approach, BMC Public Health 14 (1), 593, 2014**
4. **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**
5. **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**
6. 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
7. 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)
8. 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)
9. 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
10. 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)
11. "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
12. 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 ,
13. 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,
14. 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)
15. 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)
16. "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)
17. 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
18. 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
19. 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.
20. "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 .
21. "What is Enough Quality for Data Repositories?" by Tim Menzies and Adam Brady and Ekrem Kocaguneli. Software Quality Professional, volume 13, number 3, 2011 .
22. 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 .
23. 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 .
24. 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 .
25. 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 .
26. 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 .
27. Oussma El-Rawas and Tim Menzies, "A Second Look at Faster, Better, Cheaper" in.Innovations Systems and Software Engineering pages 319-335 2010 .
28. 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. .
29. 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 .
30. 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 .
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32. 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.
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41. T. Menzies and J. Richardson. Making sense of requirements, sooner. IEEE Computer, October 2006. Available from http://menzies.us/pdf/06qrre.pdf.
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61. T.J. Menzies. An investigation of the ai and expert systems literature 1980-1984. AI Magazine, Summer 1989.
62. T.J. Menzies. Domain-specific knowledge representations. AI Expert, Summer 1989.

Books/Book Chapters

1. **Sharing Data and Models in Software Engineering, T. Menzies, Ekrem Kocaguneli, L. Minku, F. Peters, B. Turhan, Morgan Kaufmann, 2014**
2. **Occam's Razor and Simple Software Project Management T Menzies Software Project Management in a Changing World, 447-472, 2014**
3. **Data mining: a tutorial T Menzies, Recommendation Systems in Software Engineering. Springer, Berlin, 2014**
4. "The Quest for Convincing Evidence" by Tim Menzies and Forrest Shull. Making Software: What Really Works and We We Believe it 2010

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Selected Citations (at least 50 citations; 26 publications)

- 5899 citations; h-index: 37; i-10 index: 139
- (obtained on April 12, 2015 from https://scholar.google.com/citations?hl=en&user=7htTUTgmLtUC&view_op=list_works; deleted inaccurate references and extraneous information; sorted by number of citations; combined citations of duplicate entries)

Cites	Authors	Title	Publication	Vol	Num	Pages	Year
577	Menzies, Tim; Greenwald, Jeremy; Frank, Art;	Data mining static code attributes to learn defect predictors	Software Engineering, IEEE Transactions on	33	1	13-21	2007
176	Menzies, Tim; Chen, Zhihao; Hihn, Jairus; Lum, Karen;	Selecting best practices for effort estimation	Software Engineering, IEEE Transactions on	32	11	883-895	2006
157	Turhan, Burak; Menzies, Tim; Bener, Ayse B; Di Stefano, Justin;	On the relative value of cross-company and within-company data for defect prediction	Empirical Software Engineering	14	5	540-578	2009
108	Menzies, Tim; Hu, Ying;	Data mining for very busy people	Computer	36	11	22-29	2003
103	Chen, Zhihao; Menzies, Tim; Port, Daniel; Boehm, Barry;	Finding the right data for software cost modeling	Software, IEEE	22	6	38-46	2005
103	Menzies, Tim; Milton, Zach; Turhan, Burak; Cukic, Bojan; Jiang, Yue; Bener, AyÅŸe;	Defect prediction from static code features: current results, limitations, new approaches	Automated Software Engineering	17	4	375-407	2010

99	Menzies, Tim; Dekhtyar, Alex; Distefano, Justin; Greenwald, Jeremy;	Problems with precision: A response to "comments on data mining static code attributes to learn defect predictors	IEEE Transactions on Software Engineering	33	9	637	2007
95	Menzies, Tim;	Applications of abduction: knowledge-level modelling	International Journal of Human-Computer Studies	45	3	305-335	1996
88	Menzies, Tim; Port, Dan; Chen, Zhihao; Hihn, Jairus; Stukes, Sherry;	Validation methods for calibrating software effort models	Proceedings of the 27th international conference on Software engineering			587-595	2005
85	Menzies, Tim; Turhan, Burak; Bener, Ayse; Gay, Gregory; Cukic, Bojan; Jiang, Yue;	Implications of ceiling effects in defect predictors	Proceedings of the 4th international workshop on Predictor models in software engineering			47-54	2008
82	Jiang, Yue; Cuki, Bojan; Menzies, Tim; Bartlow, Nick;	Comparing design and code metrics for software quality prediction	Proceedings of the 4th international workshop on Predictor models in software engineering			18-24	2008
76	Feather, Martin S; Menzies, Tim;	Converging on the optimal attainment of requirements	Requirements Engineering, 2002. Proceedings. IEEE Joint International Conference on			263-270	2002
76	Jiang, Yue; Cukic, Bojan; Menzies, Tim;	Fault prediction using early lifecycle data	Software Reliability, 2007. ISSRE'07. The 18th IEEE International Symposium on			237-246	2007
75	Chen, Zhihao; Menzies, Tim; Port, Dan; Boehm, Barry;	Feature subset selection can improve software cost estimation accuracy	ACM SIGSOFT Software Engineering Notes	30	4	6-12	2005
74	Menzies, Tim;	Knowledge maintenance: The state of the art	The Knowledge Engineering Review	14	1	1-46	1999
73	Compton, Pea; Edwards, G; Kang, B; Lazarus, L; Malor, R; Menzies, T; Preston, P; Srinivasan, A; Sammut, C;	Ripple down rules: possibilities and limitations	Proceedings of the Sixth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop, Calgary, Canada, University of Calgary			1-8	1991
75	Gay, Gregory; Haiduc, Sonia; Marcus, Andrian; Menzies, Tim;	On the use of relevance feedback in IR-based concept location	Software Maintenance, 2009. ICSM 2009. IEEE International Conference on			351-360	2009
70	Kocaguneli, Ekrem; Menzies, Tim; Bener, Ayse; Keung, Jacky W;	Exploiting the essential assumptions of analogy-based effort estimation	Software Engineering, IEEE Transactions on	38	2	425-438	2012
62	Menzies, Tim; Compton, Paul;	Applications of abduction: Hypothesis testing of neuroendocrinological qualitative compartmental models	Artificial intelligence in medicine	10	2	145-175	1997
60	Menzies, Tim; Easterbrook, Steve; Nuseibeh, Bashar; Waugh, Sam;	An empirical investigation of multiple viewpoint reasoning in requirements engineering	Requirements Engineering, 1999. Proceedings. IEEE International Symposium on			100-109	1999
59	Menzies, Tim; Butcher, Andrew; Marcus, Andrian; Zimmermann, Thomas; Cok, David;	Local vs. global models for effort estimation and defect prediction	Proceedings of the 2011 26th IEEE/ACM International Conference on Automated Software Engineering			343-351	2011
55	Menzies, Tim;	Cost benefits of ontologies	intelligence	10	3	26-32	1999
50	Menzies, Tim; Sinsel, Erik;	Practical large scale what-if queries: Case studies with software risk assessment	Automated Software Engineering, 2000. Proceedings ASE 2000. The Fifteenth IEEE International Conference on			165-173	2000
56	Menzies, Tim; DiStefano, Justin; Orrego, Andres; Chapman, R;	Assessing predictors of software defects	Proc. Workshop Predictive Software Models				2004

50	Kocaguneli, Ekrem; Menzies, Tim; Keung, Jacky W;	On the value of ensemble effort estimation	Software Engineering, IEEE Transactions on	38	6	1403-1416	2012
50	JH Andres, T. Menzies, F. Li	Genetic algorithms for randomized unit testing	Software Engineering, IEEE Transactions on	37	1	80-94	2011

B. RESEARCH FUNDING

Total $7,315,081 [PI: $7,265,081]; $50,000 gifts in kind

* after title indicates lead PI

Sponsored Grants:

1. **Title: *Effort Estimation (year2)****
   Agency/Program: NASA (JPL)
   Duration: 2015 to 2015
   PI: Tim Menzies
   Amount: $30,000

2. **Title: *Transfer Learning in SE****
   Agency/Program: NSF
   Duration: 2013 to 2017
   PI: Tim Menzies
   Amount: $1,151,803

3. Title: *Effort estimation**
   Agency/Program: NASA (JPL)
   Duration: 2013 to 2014
   PI: Tim Menzies
   Amount: $47,000

4. Title: *Early Childhood Obesity Program **
   Agency/Program: USDA
   Duration: 2012 to 2016
   PI: Susan Partington
   Amount: $133,526 (share to Tim Menzies)

5. Title*: New directions in AI and SE **
   Agency/Program: NSF
   Duration: 2012 to 2013
   PI: Tim Menzies
   Amount: $14,700

6. Title: *Active Learning **
   Agency/Program: Dod STTR)
   Duration: 2010 to 2012
   PI: Tim Menzies
   Amount: $230,514

7. Title: *Better Understanding of SE data **
   Agency/Program: NSF (CISE)
   Duration: 2010 to 2014
   PI: Tim Menzies
   Amount: $748,000

8. Title: *Int Center of Excellence in SE**
   Agency/Program: Qatar Research
   Duration: 2010 to 2012
   PI: Tim Menzies

Amount: $294,375

9. Title: Border Crossing
   Agency/Program: CITRE
   Duration: 2010 to 2011
   PI: Bojan Cukic
   Amount: $70,000 (share to Tim Menzies)

10. Title: *Overcoming Brittleness* *
    Agency/Program: National Forensics
    Duration: 2010 to 2011
    PI: Tim Menzies
    Amount: $35,721

11. Title: *STEP Research* *
    Agency/Program: National Archives
    Duration: 2009 to 2010
    PI: Tim Menzies
    Amount: $627,000

12. Title: *STEP research* *
    Agency/Program: National archives
    Duration: 2008 to 2009
    PI: Tim Menzies
    Amount: $717,000

13. Title: *Automatic Quality Assessment* *
    Agency/Program: NSF (CISE)
    Duration: 2008 to 2011
    PI: Tim Menzies
    Amount $540,000

14. Title: *Conclusion stability* *
    Agency/Program: National Forensics
    Duration: 2008 to 2009
    PI: Tim Menzies
    Amount: $80,000

15. Title: *Understanding Anomalies* *
    Agency/Program: NASA
    Duration: 2008 to 2008
    PI: Tim Menzies
    Amount: $58,000

16. Title: *Crystal Ball* *
    Agency/Program: NASA
    Duration: 2008 to 2008
    PI: Tim Menzies
    Amount: $55,000

17. Title: *Advanced UML modeling* *
    Agency/Program: NASA
    Duration: 2008 to 2008
    PI: Tim Menzies
    Amount: $50,000

18. Title: *Applied Technology Lab* *
    Agency/Program: NASA
    Duration: 2007 to 2008

PI: Tim Menzies
Amount: $95,551

19. Title: *Next generation metrics: phase 1* *
Agency/Program: Dod STTR
Duration: 2007 to 2008
PI: Tim Menzies
Amount: $40,715

20. Title: *WVU Liaison* *
Agency/Program: NASA
Duration: 2007 to 2007
PI: Tim Menzies
Amount: $39,707

21. Title: *Analysis metrics (Galaxy Global)* *
Agency/Program: NASA
Duration: 2007 to 2008
PI: Tim Menzies
Amount: $25,000

22. Title: *STEP research* *
Agency/Program: National archives
Duration: 2007 to 2008
PI: Tim Menzies
Amount: $15,482

23. Title: *Learning software process model* *
Agency/Program: NASA
Duration: 2006 to 2007
PI: Tim Menzies
Amount: $113,255

24. Title: *Improving IV&V Techniques* *
Agency/Program: NASA
Duration: 2006 to 2007
PI: Tim Menzies
Amount: $107,990

25. Title: *Co-op agreement supplemental funds* *
Agency/Program: NASA
Duration: 2006 to 2006
PI: Tim Menzies
Amount: $74,581

26. Title: *co-op funds for Eisland Hall Lab* *
Agency/Program: NASA
Duration: 2006 to 2006
PI: Tim Menzies
Amount: $30,000

27. Title: *How to Argue Less* *
Agency/Program: NASA
Duration: 2005 to 2005
PI: Tim Menzies
Amount: $260,000

28. Title: *Spectrum of Model Checking Methods* *
Agency/Program: NASA

Duration: 2005 to 2005
PI: Tim Menzies
Amount: $160,000

29. Title: *Risk/Cost models for Autonomy* *
Agency/Program: NASA
Duration: 2005 to 2005
PI: Tim Menzies
Amount: $160,000

30. Title: *How much will it cost?* *
Agency/Program: NASA
Duration: 2005 to 2005
PI: Tim Menzies
Amount: $122,161

31. Title: *Intelligent Vehicle Health Management* *
Agency/Program: NASA SBIT
Duration: 2005 to 2005
PI: Tim Menzies
Amount: $65,000

32. Title: *Spectrum of Model Checking Methods* *
Agency/Program: NASA
Duration: 2004 to 2004
PI: Tim Menzies
Amount: $160,000

33. Title: *A next-generation testable language* *
Agency/Program: NASA
Duration: 2004 to 2005
PI: Tim Menzies
Amount: $70,000

34. Title: *The research rover* *
Agency/Program: NASA
Duration: 2004 to 2004
PI: Tim Menzies
Amount: $48,000

35. Title: *Understanding models better* *
Agency/Program: NASA
Duration: 2003 to 2005
PI: Tim Menzies
Amount: $107,000

36. Title: *Model checking & procedural languages* *
Agency/Program: NASA
Duration: 2003 to 2003
PI: Tim Menzies
Amount: $50,000

37. Title: *See more! Learn more! Tell more!* *
Agency/Program: NASA
Duration: 2003 to 2003
PI: Tim Menzies
Amount: $47,000

38. Title: *A spectrum of IV&V techniques* *

Agency/Program: NASA
Duration: 2002 to 2003
PI: Tim Menzies
Amount: $200,000

39. Title: *Better risk modeling* *
Agency/Program: NASA
Duration: 2002 to 2002
PI: Tim Menzies
Amount: $27,000

40. Title*: Tree query languages* *
Agency/Program: NASA
Duration: 2001 to 2001
PI: Tim Menzies
Amount: $27,000

41. Title: *NSERC grant* *
Agency/Program: Canada Research Council
Duration: 2000 to 2000
PI: Tim Menzies
Amount: $81,000

42. Title: *High Quality Knowledge Initiative* *
Agency/Program: NASA
Duration: 1998 to 1999
PI: Tim Menzies
Amount: $110,000

43. Title: *Abduction for software engineering* *
Agency/Program: Aust. Researc Council
Duration: 1997 to 1998
PI: Tim Menzies
Amount: $10,000

44. Title: *Vice-Chancellor's Research Fellowship**
Agency/Program: UNSW
Duration: 1996 to 1998
PI: Tim Menzies
Amount: $135,000

Gifts in Kind:

1. Title: *Scripting for Big data* *
Agency/Program: Lexis Nexis
Duration: 2014 to 2015
PI: Tim Menzies
Amount: $50,000

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)	$316,681	08/02/2014 through 06/30/2017
Total external funding: $345,181						

Internal Funding
Total internal funding: $0

Pending Proposals (including pre-proposals)					
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
Total of pending proposals: $927,269					

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
Total of non-funded proposals: $793,842					

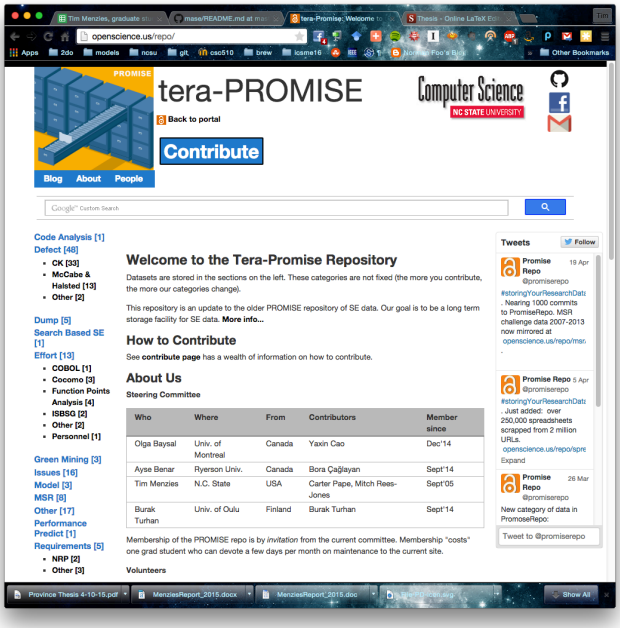
GIFTS:

2015	Scripting for Big Data	Menzies, Timothy Hames	Computer Science	Lexix Nexis Corporatiom	$50,000

C. CENTERS AND MULTIDISCIPLINARY COLLABORATION

1. Curator, Promise Repository of SE Data: openscience.us/repo

   For artifacts other than code, this is now the largest open science resource in software engineering for long term storage of data used in publications on software analytics.



IV. EXTENSION AND ENGAGEMENT WITH CONSTITUENCIES OUTSIDE THE UNIVERSITY

- 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'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 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

- **Software Defect Prediction:** *I have been instrumental in the development of experimental methods that allow for the discovery and precise evalution of software defect predictors generated by data miners from static code attributes.* According to Martin Shepperd my IEEE TSE 2007[14] paper on learning defect predictors "represents the state of the art for this kind of research" and "is widely cited".
    - **This work is the most cited paper since 2005 in IEEE Transactions in Software Engineering (source: http://academic.research.microsoft.com).**
- **Cross-company Learning** : *I was one of the first to demonstrate that effective local effort/defect models can be learned from data imported from other companies. I* have shown that useful models can be built if *relevancy filtering* selects the subset of the data from other companies that is most relevant to the local company[15].
    - **This work is the third-most cited paper in the Empirical Software Engineering Journal 2009 to 2014 (source: Google Scholar).**
- **Software Effort Estimation :** *I remain one the most prominent publishing researches in this field.* Elsewhere, I have addressed, and reduced, one of the major outstanding problems in the field of effort estimation*; i.e conclusion instability.* Using Ensemble learning*, I* have found that if we study enough data sets and enough learners then the magnitude of that instability is less than the total sample[16].
    - **Another 2012 paper of mine on analogy and effort estimation as the most-cited estimation paper in the last five years[17] (source: Google Scholar metrics)**
- **Software Requirements Engineering:** *I was one of the earliest pioneers in the field of search-based software engineering for requirements engineering.* According to Mark Harman, in 2002 I was one of the earliest to apply Pareto optimality in search-based software engineering (SBSE) for requirements engineering[18]
- **Optimization of Software-Intensive Systems :** *I have developed (and demonstrated the value of) very fast non-numeric optimizers for software-intensive systems.* For the purposes of controlling spacecraft re-entry guidance software, my learners generated better controllers and ran 40 times faster than the state- of-the-art numeric optimizers[19].
    - **For the purposes of extracting products from product lines, for 2013,2014, my algorithms represented the state of the art on that field (most number of goals, largest models[20]).**
- **Measurement Errors :** *I have discovered a previously undocumented subtle, and dangerous, aspect of a widely-used performance measure.* Precision is a commonly-used assessment measure used in data mining. In 2007, I showed that this seemingly sim- ple measure had significant problems when the target class is relatively rare (specifically, for such data sets, seemingly minor changes in the learning process can lead to massive changes in the precision values)[21].
- **The PROMISE Project:** *I have been very active in solving an outstanding problem in software engineering: accessing the data required for repeatable experiments.* In order to support the above research, I had to create a source of SE data. Accordingly, in 2005, I founded the PROMISE conference on repeatable experiments in software engineering. The goal of PROMISE is to give the research community free access to the data sets that we can use for analysis of software engineering data.

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[14] 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.

[15] 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.

[16] 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)

[17] 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 ,

[18] 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.

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[20] Scalable product line configuration: A straw to break the camel's back, ASE , 2013 , AS Sayyad, J Ingram, T Menzies, H Ammar

[21] 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.

VI. SERVICE TO THE UNIVERSITY AND PROFESSIONAL SOCIETIES

A. UNIVERSITY SERVICE

- **Member, Two search committees, Computer Science Software Engineering (2015)**
- **Volunteer, Open Day, March 2015**
- **Speaker, Graduate research seminar series (CS), November '14**

B. NATIONAL AND INTERNATIONAL SERVICE

- Editorial Board
  - Empirical Software Engineering International Journal, 2009-present
  - Automated Software Engineering journal (2010 – present)
- Associate Editor
  - IEEE Transactions on Software Engineering, 2011-present
- General Chair
  - **IEEE International Conference Software Maintenance and Evolution, 2016**
- Program Chair/Co-Chair:
  - **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)
- Guest Editor:
  - **(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.
  - (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),

- Workshop Committee:
  - .
- Program Co-Chair and Co-Founder:
  - .
- Program Committee:
  - **2016:**
    - **Icse'16,**
  - **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