



RESEARCH UNITS, CENTRES AND INSTITUTES

Annual Report Template

Please refer to the University of Auckland Policy on Research Units, Centres and Institutes for more information on reporting and accountability requirements. A copy of this policy is available from:

[Establishing, reporting on, and review of units, centres and institutes](#)

Section 1a - IDENTIFICATION INFORMATION:

Title of Unit, Centre or Institute:	Centre for Mathematical Social Sciences
Name of Director:	Dr Mark C. Wilson
Name of Deputy Director:	A/Prof Matthew Ryan; A/Prof Arkadii Slinko

Section 1b – ENDORSEMENT OF REPORT:

Signatures:	<i>Please sign in appropriate space below</i>
Director (Required for all Units/Centres/Institutes)	
Head of Department (Required only for Department Units/Centres)	
Dean (Required for Faculty/University Centres/Institutes)	

Section 2 – ADVISORY BOARDS AND MEETING DATES:

Names of Advisory Board members (for Faculty Centres and University Centres and Institutes)	N/A (but see cmss.auckland.ac.nz if interested)
Names of Management Committee Members (for University Centres and Institutes)	N/A
Dates of the meetings of the advisory board and management committees that took place during the year	N/A

Section 3 – PARTICIPATING MEMBERS AND EMPLOYEES/STUDENTS:

Names and Departments of participating members	<ul style="list-style-type: none"> • Dr Mark Wilson (Director 2011) • A/Prof Arkadii Slinko (Seminar Organizer and Deputy Director 2011) • A/Prof Matthew Ryan (Deputy Director 2011) • Dr Patrick Girard (Philosophy) • Dr Jeremy Seligman (Philosophy) • A/Prof John Hillas (Economics) • Dr Geoffrey Pritchard (Statistics) • Dr Tan Lee (Accounting and Finance) <ul style="list-style-type: none"> • Dr Simona Fabrizi (Massey University, Albany)
List names, positions, and FTEs of all staff employed and postgraduate students involved in the Unit, Centre or Institute	<p>Reyhaneh Reyhani PhD student (Department of Computer Science)</p> <p>Tatiana Gvozdeva PhD student (Department of Mathematics)</p> <p>Ali Hameed PhD student (Department of Mathematics)</p> <p>Harshal Chitale PhD student (Department of Economics)</p>

Section 4 – INTRODUCTION:

Provide here a brief introduction to the report (maximum of 300 words)	The centre's second year of existence was productive, and its profile has been lifted substantially. Members worked closely on grant applications, outreach activities and workshop organization, and increasingly on publications.
--	---

Section 5 – AIMS, GOALS AND FUTURE PLANS:

<p>a. General Aims: Briefly describe the general aims (plans and objectives/goals) of the Unit, Centre or Institute. Identify how they address the University and Faculty Strategic Plan.</p>	<p>The Centre for Mathematical Social Sciences is a group of researchers interested in applying mathematical and computational modelling to social sciences (particularly politics and economics), based at the University of Auckland. The central topic is mathematics of collective decisions made by a group of self-motivated agents.</p> <p>The main goals of the centre are to serve as a focal point for seminars, workshops and other research collaboration, for postgraduate student training, and for public outreach. They obviously relate strongly to Objectives 1,3,4,5,6,11 of the UoA Strategic Plan 2005-2012, and to points 2,6,10 of the FoS Strategic Plan 2010-2015.</p>
<p>b. Goals for Reporting Year: Describe the specific</p>	<p>Increase profile of CMSS at UoA and more widely; increase links with similar overseas centres; obtain more secure funding.</p>

Appendix 2

goals for the reporting year.	
c. Plans for Upcoming Year: Outline the plans for the next year. Identify any resource implications.	More funding is critical. Ask UoA whether a more flexible structure is possible for a cross-faculty group such as ours. Work towards influencing undergraduate/postgraduate courses and degrees that will allow us to attract local students to the kind of interdisciplinary research we aim for at PhD level.

Section 6 – MAJOR ACHIEVEMENTS AND OTHER NOTABLE ACTIVITIES:

Report against the specific goals listed in 5b above	
Summary of major developments and achievements. Identify how these activities contribute to the research capability of the department or faculty (beyond what would be achieved through the activities of the individual members). Please provide greater detail for anything noteworthy that may give useful publicity to the University	<p>We were successful with a Seelye grant application for the visit of Prof Matthew Jackson (Stanford, Economics), the world's top expert in social networks in economics. The visit is planned for early 2013 and we intend to make full use of it by arranging an appropriate workshop and using him as a drawcard.</p> <p>CMSS members Pritchard and Wilson developed a simulator for the 2011 referendum, which elicited considerable publicity including an interview for a story in Metro magazine. This led to consulting work involving an electronic voting system.</p> <p>A planned visit by Wilson to the Institute for Mathematical Behavioral Sciences at University of California-Irvine, in order to make formal links, was postponed owing to illness.</p> <p>CMSS made a detailed submission to be a main focus of activity for NZIMA, as part of their plan for a new CoRE bid to TEC.</p>
Comment on any co-operative commercial activities, research with other University or Government laboratories or research groups	Pritchard and Wilson had a consulting activity involving voting. We have been approached by an investment company aiming to develop a working relationship with possible research and student support implications.
Comment on any courses given or workshops and seminars held	The "2011 summer workshop" was held in February 2012. It had 20 attendees including invited speakers from France, Poland, Singapore and Australia. The regular CMSS seminar had 10 speakers from Germany, Queensland, and Auckland. Mark Wilson gave a public talk in the CULM/CMCT series on the Mathematics of Elections on 18 October.

Section 7 - Reviews

Date of last review	N/A
Review Recommendations	N/A

Appendix 2

List the recommendations of the review and give an update of progress on addressing the recommendations.	
--	--

Section 8 – FINANCIAL REPORT

State whether the Unit, Centre or Institute has its own Activity Centre/s and list the Activity Centre/s being used	No – uses Mathematics Department
State sources of funding, for example, from research funds from outside bodies, from the Department or Faculty, or other	UoA Cross Faculty Fund 2010 \$18200 Seelye Foundation 2011 (planned visit of Matthew Jackson) \$10000 Department of Mathematics 2011 \$ Department of Computer Science 2011 \$1000 Personal PBRF allocation (A. Slinko)
List any significant resource allocation decisions taken by the Advisory Board during this reporting year (if applicable)	N/A – the biggest expenditure is on the annual workshop, most of that for the invited speakers.
Include a statement of financial performance (contact Faculty Accountant for assistance), or give a clear explanation of the reasons if there has been no financial activity	N/A (CMSS does not have its own Activity Centre, see above)

Section 9 – RESEARCH OUTPUTS

Include a list of publications and other research outputs	<p>The CMSS does not have a separate research report series. Members publish in international conference proceedings and journals. A (probably incomplete) list of such publications follows. Talks in the CMSS seminar series are not listed. Nor are working papers/preprints (of which there are a large number), nor work not related to the Centre's main activities.</p> <p>Ianovski, E., Yu, L., Elkind, E., & Wilson, M.C. (2011). <i>Complexity of safe manipulation under scoring rules</i>. Proceedings of IJCAI 2011, Barcelona, Spain.</p> <p>Pritchard, G., & Wilson, M.C. (2011). 2011 Referendum Options Simulator. [Computer software]. See cmss.auckland.ac.nz.</p> <p>Wilson, M.C. (2011). <i>The Mathematics of Elections</i>. Presented at Auckland, CULMS/CMCT Lecture, 18 October 2011.</p> <p>M. Ryan, Luca Rigotti and Rhema Vaithianathan. "Optimism and Firm Formation" <i>Economic Theory</i> 46(1) (2011): 1-38.</p> <p>M. Ryan and Rhema Vaithianathan. "Verifiability and Neologism-Proofness in a</p>
---	--

<p>Sender-Receiver Game" <i>Journal of Economic Behavior and Organization</i> 79(3): 256-262.</p> <p>Elkind, E., Faliszewski, P., & Slinko, A.M. (2011). Cloning in Elections: Finding the Possible Winners. <i>Journal of Artificial Intelligence Research</i>, 42, p529-573.</p> <p>Elkind, E., Faliszewski, P., & Slinko, A. (2011). Rationalizations of Condorcet-consistent rules via distances of Hamming type. <i>Social Choice and Welfare</i>, DOI: 10.1007/s00355-011-0555-0 (Online first).</p> <p>Gvozdeva, T., & Slinko, A.M. (2011). Weighted and Roughly Weighted Simple Games. <i>Mathematical Social Sciences</i>, 61 (1), p20-30.</p> <p>Gvozdeva, T., Hemaspaandra, L.A. & Slinko, A.M. (2011). Three Hierarchies of Simple Games Parameterized by "Resource" Parameters. <i>International Journal of Game Theory</i>, DOI 10.1007/s00182-011-0308-4. (Online first).</p> <p>Elkind, E., Faliszewski, P., & Slinko, A. (2011). <i>Homogeneity and Monotonicity of Distance-Rationalizable Voting Rules</i>. Presented at Conference on Autonomous Agents and Multiagent Systems (AAMAS), Taipei, Taiwan.</p> <p>XIONG, Z.; SELIGMAN, J.M., 'How Questions Guide Choices: A Preliminary Logical Investigation' In: Wang, D.; Reynolds, M., AI 2011: Advances in Artificial Intelligence, Springer LNCS 7106, 2011. DOI: 10.1007/978-3-642-25832-9_47</p> <p>ZHEN, L; SELIGMAN, J.M., 'A logical model of the dynamics of peer pressure', <i>Electronic Notes in Theoretical Computer Science</i>, Volume 278, 3 November 2011, Pages 275-288, ISSN 1571-0661, 10.1016/j.entcs.2011.10.021. (http://www.sciencedirect.com/science/article/pii/S1571066111001496)</p> <p>XIONG, Z.; SELIGMAN, J.M., 'Open and closed questions in decision-making', <i>Electronic Notes in Theoretical Computer Science</i>, Volume 278, 3 November 2011, Pages 261-274, ISSN 1571-0661, 10.1016/j.entcs.2011.10.020. (http://www.sciencedirect.com/science/article/pii/S1571066111001484)</p> <p>XIONG, Z.; SELIGMAN, J.M., 'A logic of questions for rational choice' In: van Ditmarsch, H.; Lang, J.; Ju, S. (eds.) <i>Logic, Rationality, and Interaction</i>, Proceedings of the Third International Workshop (LORI 3), Springer LNAI 6953, pp. 398-399, 2011, DOI 10.1007/978-3-642-24130-7_36</p> <p>ZHEN, L; SELIGMAN, 'The dynamics of peer pressure' In: van Ditmarsch, H.; Lang, J.; Ju, S. (eds.) <i>Logic, Rationality, and Interaction</i>, Proceedings of the Third International Workshop (LORI 3), Springer LNAI 6953, pp. 390-391, 2011, DOI: 10.1007/978-3-642-24130-7_32</p> <p>SELIGMAN, J.M; GIRARD, P.; LIU, F., 'Logic in the Community', In Banerjee, M. and Seth, A. (eds.), <i>Proceeding of the Fourth Indian Conference in Logic and Applications</i>, Springer LNAI 6521, p178-188, 2011.</p> <p>GIRARD, P. 'Modal Logic for Lexicographic Preference Aggregation', In <i>GAMES, NORMS AND REASONS</i> Synthese Library, 2011, Volume 353, 97-117, DOI: 10.1007/978-94-007-0714-6_6</p> <p>Girard, Patrick; Roy, Olivier; Marion, Mathieu (Eds.)</p>
--

GIRARD, P.; ROY, O.; MARION, M. (Eds). <i>Dynamic Formal Epistemology</i> . Synthese Library, Vol. 351 1st Edition., 2011, X, 242 p.
--

Please forward your report to your Head of Department or Faculty Office for endorsement (Section 1B above). Note: Annual Reports to be submitted to Research Committee must reach the Research Office by 28 February.