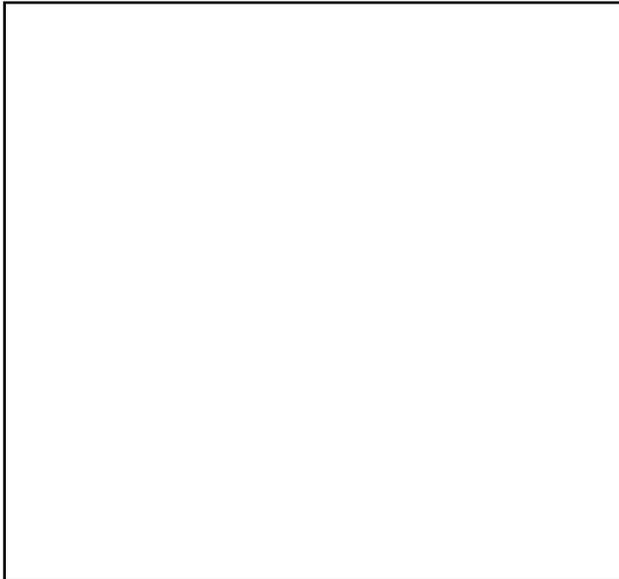CURRICULUM VITAE

CLEMENCY JANE MONTELLE

Department of Mathematics and Statistics
University of Canterbury
Private Bag 4800
Christchurch, New Zealand
c.montelle@math.canterbury.ac.nz
DOB: 8 July 1977

EDUCATION

Doctor of Philosophy in the History of Mathematics, Brown University (May 2005)

Master of Science in Mathematics with Distinction, Canterbury University (2000)

Batchelor of Arts with First Class Honours in Mathematics and Classical Studies, Canterbury University (1999)

ACADEMIC AWARDS AND SCHOLARSHIPS

Fulbright Award (1999) for Graduate Study in the United States of America, $USD 60,000 for stipend, airfares, and first year university fees

Brown University (2004) Miss Abbots School Fellowship, $USD 50,000 (stipend and university fees)

Brown University, (2001-3) Residence Fellowship, $USD 12,000 plus accommodation and tuition fees per annum.

Brown University (2000) Research Fellowship, $USD 47,000 (stipend and university fees)

Canterbury University (1999) Masters Scholarship, $NZD 5,000 + fees.

Canterbury University (1996) Undergraduate Scholarship

RESEARCH GRANTS AND FELLOWSHIPS

Marsden Fund-Royal Society of New Zealand (2011-2013) Three year investigator-initiated project entitled "T*he Development of Computational Procedures and Numerical Tables in Sanskrit Mathematics in the Second Millennium*" with Prof. Kim Plofker $307,000

International Science and Technology Linkages Fund (ISAT) Bilateral Research Award to support bilateral international research relations for New Zealand science; affiliation with CNRS, France (2010) $5000.

University of Canterbury Research Award (2010) An award to support research associated with a research proposal passing the first round of the Marsden Research Awards, Royal Society of New Zealand, $5,000

University of Canterbury Post-Doctoral Fellowship Award (2009) An award to appoint a research fellow to work with me on collaborative projects (12 months), $59,000.

University of Canterbury Research Initiative (2009) An award for additional conference travel to the Joint Mathematical Meetings, San Francisco $5,000.

University of Canterbury Research Fellowship (2008) College of Engineering Research Initiative Grant to run a workshop "Mathematical Diagrams in Sanskrit Manuscripts (December, 15-19), $5,000

University of Canterbury Research Fellowship (2008) For Research Assistance on collaborative research project, $4,000

University of Canterbury Research Fellowship (2006) to undertake a research project with Dr Philip Catton (Philosophy) in the History of Science, $3,500.

Houghton Library, Harvard University, (Summer 2004, Summer 2003), The Preparation of a Catalogue of Scientific Sanskrit Manuscripts, $USD 30,000.

Brown University (Summer, 2002) Research Assistant to Prof. David Pingree-preparation and collation of manuscripts, $USD 6,000.

Oriental Institute, Chicago University, (Summer 2001), Intensive Akkadian Assistantship with Prof. Erica Reiner (University of Chicago) and Prof. Hermann Hunger (University of Vienna), $USD 2,000

British Museum, London, (Summer 2001) Survey of Astronomical Cuneiform Texts $USD 1,000 plus airfares and accommodation.

ACADEMIC AWARDS, ACCOLADES, AND MEDIA

Lecturer of the Year (2008) University of Canterbury Students' Association Awards. Ranked top three in the College of Engineering, UC.

Golden Key (2010-) Invited Honourary member of the Golden Key International Honour Society for *Excellence in Research*, University of Canterbury Chapter. Invited to give Keynote Address to the annual society prizegiving on the importance of Research in Society.

Media (TV) Interviewed as a mathematical expert on probability, randomness, and mathematical patterns for TV3 Campbell Live (Primetime Current Affairs)

7pm 10th November, 2011. (http://www.3news.co.nz/Turning-11-on-111111/tabid/367/articleID/232336/Default.aspx)

Media (Film) Invited as a representative of my field by several media institutions, including documentary footage for NZIMA "Lost in Translation" (http://www.mathsreach.org/Lost_in_Translation) and the "Ever Wondered" national TV series (2011).

Media (Print) My profile has been written up for various institutions, most recently in the Association for Women in Science (NZ) (Feb 2011), the Rangi Ruru Alumni Society Publication (June 2011), the Canterbury Mathematics Magazine (2009) and the Fulbright Alumni Association Newsletter (2011), the UC Chronicle (2011).

Media (Radio) I was interviewed by a Journalist for Plains FM (Aired Monday 1st August 2011) regarding the my recent Book that has been published by Johns Hopkins University Press (April 2011). Another academic expert was part of the interview, who gave a glowing appraisal of the impact that the book was likely to have on scholarship.

REFEREED PUBLICATIONS

BOOKS

• [Book] "*Chasing Shadows: Mathematics, Astronomy, and the Early Reckoning of Eclipse theory*", Johns Hopkins University, 2011, 408pp.

PEER-REVIEWED JOURNAL ARTICLES AND BOOK CONTRIBUTIONS

•[Report] Montelle, C. *Mini-Workshop: History of Numerical and Graphical Tables.* Mathematisches Forschungsinstitut Oberwolfach: History of Numerical and Graphical Tables, 27 Feb - 5 March 2011. In Oberwolfach Reports, 37-39. http://dx.doi.org/10.4171/OWR/2011/12.

•[Invited Chapter in Book] Montelle, C. (2011) "An Ocean Of Knowledge: Unity Plurality, Diversity, and Mathematics in Ancient India" for Jones, Alexander, and Liba Taub (eds.) *Ancient Science* for the *Cambridge History of Science Series*, Cambridge University Press,.35pp (in process September 2011)

•[Article] with Kathleen M Clark, "Logarithms: The Early History of a Familiar Function" *Loci: Convergence* (June 2010), DOI: 10.4169/loci003495

•[Report] with Keller, Agathe "Workshop on the History of Numerical Tables," *Indian Journal for the History of Science,* 46.1 (2011) 181—184

•[Article] James, Alex, Clemency Montelle, Jacqui Nokes, John Hannah, `Meeting the needs of our best and brightest: curriculum acceleration in tertiary mathematics', in *International Journal Of Mathematical Education in Science and Technology,* vol. 42, n. 3, April 2011, pp. 299—312.

• [Essay Review] "Having the Answers: Writing the History of Mathematics in India" a response to Kim Plofker *Mathematics in India* (2009, Princeton University Press) for *Historia Mathematica,* vol. 38 issue 1 (February 2011), pp. 111-122.

• [Chapter in Book] "A Symbolic History of the Derivative", in *Mathematical Time Capsules: Historical Modules for the Mathematics Classroom,* (Mathematical Association of America Notes) ed. A Shell-Gellasch and R. Jardine, (2011), 151—158.

• [Chapter in Book] "The Gregory edition of Euclid's *Opera*" in *Treasures of the University of Canterbury Library*, ed. Chris Jones et al., Canterbury University Press, 6pp (submitted and accepted, September 2010)

•[Conference Proceedings] "Using History to Enrich Undergraduate Mathematics: Beyond the Anecdote", Proceedings from the Southern Right Delta-On Undergraduate Mathematics, 185-194, Stellenbosch, South Africa, 2009.

• [Chapter in Book] "Roots, Rocks and Newton-Raphson: Algorithms for Approximating the $\sqrt{2}$ 3000 Years Apart", in *Mathematical Time Capsules: Historical Modules for the Mathematics Classroom,* (Mathematical Association of America Notes) ed. A Shell-Gellasch and R. Jardine, (2011), 229—240.

•[Conference Proceedings] Kathleen M Clark, Alex James & Clemency Montelle, "Expert" vs. "Advanced": Investigating Differences in Problem-Solving Practices.", Proceedings from the Southern Right Delta-On Undergraduate Mathematics, 50-60, Stellenbosch, South Africa, 2009.

•[Encyclopedia Articles] "Greek Numbers", "Roman Numbers", "Diophantus", for Roger Bagnall, Kai Brodersen, Craige Champion, Andrew Erskine and Sabine Huebner *The Encyclopedia of Ancient History* Wiley-Blackwell John Wiley & Sons ISBN: 9781405179355, 13 volumes, (submitted, expected release November, 2011.)

• [Chapter in Book] "Bernoulli's account of the Divergent Harmonic Series in Latin", in *Mathematical Time Capsules: Historical Modules for the Mathematics Classroom,* (Mathematical Association of America Notes) ed. A Shell-Gellasch and R. Jardine, (2011) 261—268. .

• [Chapter in Book] "The 'Well-Known Calendars': al-Khazini's Description of Significant Chronological Systems for Medieval Mathematical Astronomy in Arabic" in J. S. Steele (ed.) *Calendars and Years II: Astronomy and Time in the Ancient and Medieval World*, Oxbow Books, pp. 107—125.

• [Article] James A., Montelle C. and Williams P. *"From lessons to lectures:*

NCEA mathematics and first year performance," *International Journal Of Mathematical Education in Science and Technology*, 39, 8, 1037-50.

• [Chapter in Book] "Some Details on the Transmission of Astral Omens" in *From the Banks of the Euphrates*: *Festschrift in Honor of Alice Louise Slotsky* ed. M. Ross, pp. 295-314 (2007: Eisenbrauns)

• [Encyclopedia Article] "South-Central Asian Science" co-authored with Toke L. Knudsen, in *Medieval Science, Technology, and Medicine: An Encyclopedia (Routledge Encyclopedias of the Middle Ages),* eds. Thomas F. Glick, Steven J. Livesey, Faith Wallis, Routledge, 2005, pp. 462—465.

• [Chapter in Book] "Signs from the Sky Signs from the Earth: The Diviner's Manual Revisited" in *Under One Sky: Astronomy and Mathematics in the Ancient Near East*, edited by John M. Steele and Annette Imhausen, Munster, Ugarit-Verlag, 2002.

• [Article] "Proclus on Mathematics and the Ascent of the Soul", *Brown Classical Journal*, vol. 12 (2000).

REVIEWS

• "In the Path of the Moon Babylonian Celestial Divination and Its Legacy" by Rochberg, Francesca (Brill, Beiden Boston), 2010 for *The Journal of the American Oriental Society*, [in preparation].

• "Looking at it from Asia: The Processes that Shaped the Sources of History of Science" by Bretelle-Establet, Florence (ed),, Boston Studies in the Philosophy of Science, volume 265, (Springer Dordrecht Heidelberg London New York) for *Metascience*, 3pp.

• "Apollonius de Perge: La Section des droites selon des rapports" by Bellosta, Helene and Roshdi Rashed, (Walter de Gruyter) for *Aestimatio,* vol. 8, 2011, 5pp.

• "Mathematics of the Heavens and Earth: The Early History of Trigonometry" by Glen van Brummelen (Princeton University Press) for *Aestimatio,* vol. 7, 2010, pp. 1—6.

• "The Mathematics of Ancient Iraq" by Eleanor Robson (Princeton University Press) for *Journal of the American Oriental Society,* 129.3 (2009) 554—557.

• "Astronomy, Weather, and Calendars in the Ancient World: Parapegmata and Related Texts in Classical and Near-Eastern Societies" by Daryn Lehoux (Cambridge University Press) for *Isis,* 100: 4 (2009), 896-897.

• "Expounding the Mathematical Seed: A Translation of Bhaskara I on the Mathematical Chapter of the Aryabhatiya", by Agathe Keller (Birkhauser) for *Historia Mathematica* volume 35, issue 1 (Feb 2008), 47-50.

• "The Mathematics of Egypt, Mesopotamia, China, India, and Islam A Sourcebook" ed. Victor J. Katz (Princeton University Press) for *Aestimatio* 4, (2007) 178-190.

• "Cleomedes' Lectures on Astronomy: A Translation of the Heavens", by A. C. Bowen and R. B. Todd, (University of California Press) for the *International Journal of the Classical Tradition* (Winter 2007, 13.3, 476—9).

UNDER REVIEW/IN PREPARATION

• Montelle, C. and Kathleen M. Clark, *Priority, Parallel Insight, and Preeminence: Napier, Bürgi, and the Early History of the Logarithm Relation*, 53pp [Under second review with *Revue d'Histoire des Mathématiques,* July 2011].

• Catton, P. and C. Montelle, *The Greek Mathematical Diagram as Metonym for an Epiphany*, 25pp, [Under second review with *Philosophia Mathematica*, August 2011].

• Montelle, C. *The Karanakesari: Mathematical Tables for Computing Eclipse Phenomena*, [for submission to special edition of the *Indian Journal of the History of Science*]

PRESENTATIONS AND GUEST LECTURES

Unit for the History and Philosophy of Science, University of Sydney, Australia, "A little work on Rising Times from Greek Antiquity", (August 22, 2011)
Mathematisches Forschungsinstitut Oberwolfach, Germany, Miniworkshop: History of Numerical and Graphical Tables, "Astronomical Tables in Second Millennium Sanskrit Sources" (Feb 27-March 5, 2011)
Institut Méditerranéen de Recherches Avancées (IMéRA) "Numerical Tables in Sanskrit Sources", Marseille, France (December 13-17, 2010)
Wissenschaftshistorisches Kolloquium, Goethe-Universität, Frankfurt am Main, Germany, "Arithmetic Meets Astronomy: Hypsicles of Alexandria and his Little Work on Rising Times*"* (26 October 2010)
Institut de Recherche Mathématique Avancée, Université de Strasbourg, **France,** participant of a colloquium entitled *Courants Actuels en Histoire des Mathématiques* (21-23 October, 2010)
Institut Henri Poincare (CNRS) "The Derivation and Justification of Mathematical Rules by a Twelfth Century Sanskrit Commentator." (Paris, France 5 November 2010)

History of Science, History of Text (Rheseis Institute-CNRS) "Lining it Up: Spatial Liaisons in Sanskrit Computational Sources" (Paris, France, 2 November 2010)

International Congress of Mathematicians Satellite Conference "Mathematics in Ancient Times" invited speaker, (Calicut, Kerala, India, August 29-September 1, 2010)

Joint Math-Meetings (American Mathematical Society and Mathematical Association of America) "Hypsicles of Alexandria and the fourteenth book of Euclid's *Elements"* (San Francisco, January, 2010)

Joint Math-Meetings (American Mathematical Society and Mathematical Association of America) "John Napier and the Question of Priority" (San Francisco, January, 2010)

AAP-NZ "Greek Mathematical Diagrams" (Massey University, December 2009)

AUST-MS "MLC 2078 and the History of the Mathematical Table" (Adelaide, September, 2009)

AAP (Australasian Association of Philosophy) "Meaning and Alignment" Co-presented with Dr Philip Catton (University of Canterbury, December 2008)

ANZMC (Australian-New Zealand Mathematics Convention) "A Symbolic History of the Derivative" (University of Canterbury, December, 2008)

Canterbury Astronomical Society "Crossing the Shadow: Eclipses in the Ancient Near East" (April, 2008)

Aoraki Mathematical Association "What Not To Wear: An Introduction to Mathematical Topology" (June, 2008)

Joint Math Meetings (AMS-MAA, San Diego, 2008) "The Net of Numbers: Engaging early examples for contemporary classrooms" in the session *Using Ideas from Asian Mathematics in the Undergraduate Classroom.*

Joint Math Meetings (AMS-NZMS, Wellington, 2007) "Hypsicles of Alexandria and Arithmetic Progressions"

Canterbury Secondary Schools Heads of Mathematics Department Meeting *From Lessons to Lectures* (November, 2007)

UoC Physics and Astronomy Department Seminar (August, 2007) "Eclipse Theory in Mesopotamia: Theory and Observation"

Secondary School Friday Night Seminars (September, 2007) "Paradoxes and the Philosophy of Mathematics"

Classics Association of Christchurch (June, 2007) "Euclid of Alexandria"

Secondary School Friday Night Seminars (September, 2007) "Paradoxes and the Philosophy of Mathematics"

AAHPSSS (Australasian Association for the History Philosophy and Social Studies of Science) Session organizer of "History of Exact Sciences", and presenter: "Theory and Observation in Indian Astronomy", Dunedin, New Zealand (December, 2005)

Anamnesis: Remembering and Forgetting, "Memorisation Techniques in Indian Mathematics", Christchurch, New Zealand (2004)

Regensberg II "Eclipse Limits in Astronomical Cuneiform Texts", Amsterdam, The Netherlands (2004)

Guest Lecturer in undergraduate course Introduction to Akkadian

"Mesopotamian Mathematics", Brown University (2002)

48e RAI Leiden 2002 (Rencontre Assyriologique) "Intercalation Techniques in the Diviner's Manual", (Poster Presentation), University of Leiden, Leiden, The Netherlands (2002)

Guest Lecturer in undergraduate course History of Calculus, "Archimedes", Brown University (2002)

The Exact Sciences in Mesopotamia: A Conference in Honour of the Eightieth Birthday of Asger Aaboe, "Astronomical Procedures in the Diviner's Manual", Providence, Rhode Island (2002)

Editing Ancient Texts "The Textual Tangle of John Lydus", University of Toronto, Canada (2001)

Fifth Annual Near and Middle Eastern Civilizations Graduate Students's Symposium, "The *Zij al-Sanjari* and Foreign Influences", University of Toronto, Canada (2001)

Under One Sky: Astronomy and Mathematics in the Ancient Near East "Signs from the Sky Signs from the Earth: The Diviner's Manual Revisited", British Museum, London (2001)

Guest Seminar for Department of Physics, "Costly Crystals and Common Pebbles: A Glimpse into Ancient Indian Mathematics", University of Durham (2001)

Picking Up the Pieces: A Graduate Student Conference on Dealing with Ancient Fragmentary Texts "Reminiscences from a Summer Spent in the British Museum's Tablet Collection", Department of Classics, Brown University (2001)

Ideas in Motion The Evolution of Ancient Philosophical Ideas "Proclus on Mathematics and the Ascent of the Soul", University of Pittsburgh, Philadelphia (2000)

Guest Departmental Seminar, Department of Mathematics, "Metrics, Mythology, Magic: A Glimpse into the History of Ancient Indian Mathematics", University of Canterbury (2000)

Guest Seminar for the Department of Mathematics, "Euclid's Elements and Geometrical Algebra", Smith College, Amherst, Massachusetts (2000)

EXHIBITS

Reader's Choice Display, Houghton Library Harvard University "Sanskrit manuscripts in the Harvard Indic Collection", organized in collaboration with Toke Knudsen (September 8-October 15, 2003)

GRADUATE STUDENT SUPERVISION

PhD Thesis to commence 2012 Sanaa Bajri, *Selected Topic in the History of Mathematics in the Islamic Near East,* University of Canterbury, Co-Supervisor.

<u>PhD Thesis</u> to commence 2012 Rosalie Hosking *Selected Topic in the History of Mathematics in Japan*, University of Canterbury, Co-Supervisor.

<u>Master Thesis</u> 2010-11 Sanaa Bajri, *Arithmetic, Induction, and the Algebra of Polynomials; Al-Samaw'al and his "Splendid Book of Algebra"*, University of Canterbury, Co-Supervisor.

<u>Master Thesis</u> 2010-11 Rosalie Hosking, *The Entailment of Context-Dependence and Pluralism in Edo Period Mathematics*, University of Canterbury, Co-Supervisor.

<u>Master Thesis</u> 2009 James Davies, *Changes of Setting and the History of Mathematics: A New Study of Frege.* University of Canterbury, Co-Supervisor.

<u>Master Thesis</u> 2009 Bronwyn Rideout, *Pappus Reborn: Pappus of Alexandria and the changing face of analysis and synthesis in late antiquity*, University of Canterbury, Senior Supervisor.

<u>Honours Research Project</u>: Joshua Black (2009), James Dent (2009), Clare Bycroft (2009), Teneille Humphries (2009), Clare Bycroft (2008), Rosalie Hosking (2008), Samuel Galbraith (2007), Gloria Teng (2006).

UNIVERSITY WORK EXPERIENCE

▪University Staffing Committee College of Engineering (2010-- Permanent Member; 2007, Temporary member)
▪Program Co-Coordinator-History and Philosophy of Science (2007-2009)
▪Academic New Faculty Mentor: Departmental mentor for new staff member Elena Moltchanova (2011). Specifically choosen by HOD to offer regular professional advice and support
▪HAPS Programme Review Contributor (2007)
▪Mathematics Handbook Review (2011)
▪Departmental Representative: College of Arts (2010)
▪Academic Appointment Committee for Lectureship in Mathematics (2010) Member
▪Seminar Series Organiser (2008-2009)
▪University UCSA Student Choir: Conductor (2009) Regular weekly two hour rehearsals and two public performances throughout the year.▪Departmental Working Party on Scholarships (2009)
▪Departmental Promotions Committee (2009; 2007)
▪Departmental Teaching Committee Member (2009, 2008)
▪Research Committee member (2009, 2008)
▪Grievance Committee member (2009, 2008)
▪Department Strategic Review Committee (2008)
▪Departmental personal tutor scheme (2008) Facilitator
▪Department B.Sc. Review Preparation Committee (2007-8)

PROFESSIONAL SERVICE AND AFFLIATIONS

▪**Fulbright New Zealand (2007--)** New Zealand On-Campus outreach advisor, one of seven Fulbright alumni academics across the country chosen to represent Fulbright New Zealand at their respective Universities, and to assist with recruitment and maintain the quality and prestige of the programme, in addition to various outreach activities and strategic planning.
▪**Fulbright NZ Alumni Association (2010--)** Regional coordinator
▪**Vice President AAHPSSS** New Zealand Vice-President (2008-)
▪**International Commission of Mathematics (2010-)** New Zealand Representative.
▪**International Board of Editors (History of Mathematics Editor) (2010-)** for the Rutherford Journal for the History and Philosophy of Science and Technology
▪**Referring (2008-)** For Johns Hopkins University Press [Book Manuscripts], *Convergence* (Mathematical Association of America), *The International Journal of Mathematical Education in Science and Technology, Revue d'Histoire Des Mathematiques*.
▪**Book Reviewer** including *Aestimatio, Historia Mathematica, Journal for the American Oriental Society, Metascience, Isis*, and *Journal of the Classical Tradition*.
▪**NZSARC (New Zealand South Asia Research Center)** Deputy Director **(2011-)** Committee member **(2009-2010)**
▪**Women in Mathematical Sciences (WIMS) (2007, 2008)**
▪**OUTREACH** to primary and secondary schools. (2007-)
▪**Community Director** (Live-in Residence Fellow), Brown University (2001, 2002, 2003). Duties involved: Working with student life staff and twelve other graduate students, director of twenty peer counselors and approx four hundred undergraduate students, crisis management, committee involvement, activity and function hosting, facilitation of university policy and mediation of students and faculty.

Conference and Special Stream Organisation: including **Excellenzcluster Normative Orders** International Workshop Co-organiser "Databases for Tables from the History of Mathematics" Goethe University Frankfurt, (June 16-17, 2011), **IMéRA** International workshop co-organiser "History of Numerical Tables in Sanskrit Sources" (Dec 13-17, 2010 Marseille, France), **ICM** International Congress of Mathematicians Satellite Conference organizer "History of Sanskrit Mathematics" (September, 2010), **AAP-NZ** Australasian Association of Philosophy, New Zealand division "Proofs, Pictures, and the Philosophy of Mathematics" (Palmerston North, 2009), **Aust-MS** Australian Mathematical Society, "History of Mathematics" (Adelaide, 2009), **ANZMC** Australia-New Zealand Mathematics Colloquium, "History and Philosophy of Mathematics" (Christchurch, 2008), **NZMS-AMS** Joint Mathematics Conference, Stream Co-organiser: History and Philosophy of Mathematics, Wellington, New Zealand, December (2007), **AAHPSSS** (Australasian Association for the History, Philosophy, and Social Studies of Science), Stream organizer (Exact Sciences in Antiquity), University of Otago, (2005), **ANZAPSS**

(Aotearoa New Zealand Association for Philosophy in Secondary Schools), Conference Organiser, (2006, 2007), **The Exact Sciences in Mesopotamia: A Conference in Honor of Asger Aaboe,** Conference Organiser, (2002), Brown University.

LANGUAGES

Classical and Ancient Languages

Ancient Greek, Latin, Classical Arabic, Akkadian, Sanskrit, Demotic (partial ability) and Coptic (partial ability)

Modern Languages

French (Speaking and Reading Knowledge)
German (Reading Knowledge)

OTHER

LTCL Trinity College of London, Licentiate in Pianoforte (1998)
Performers Certificate The Royals Schools of Music London, in Pianoforte (1994)