Zvi Biener

Associate Professor
Department of Philosophy
University of Cincinnati

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Academic Expertise

Specializations: History and Philosophy of Science of the 17th Century, Newton & Newtonianism.
Competencies: Aristotle & Scholastic-Aristotelianism, Philosophy of Physics, History of Modern Science.

Academic & Professional Appointments

2025-2028	Director of Graduate Studies, Philosophy Department, University of Cincinnati
2025-2027	Past President, *International Society for the History and Philosophy of Science*
2023-2025	President, *International Society for the History and Philosophy of Science*
2021-2023	Vice-President and President-Elect, *International Society for the History and Philosophy of Science*
2020-	Editor-in-Chief, *PhilSci-Archive*
2018-2020	Fellow, Transdisciplinary Leadership Research Program (TDRLP), University of Cincinnati
2017–	Associate Professor of Philosophy, University of Cincinnati
2017–	Affiliate Faculty Judaic Studies and History Departments, and Center for Public Engagement with Science, University of Cincinnati
2011–2017	Assistant Professor of Philosophy, University of Cincinnati
2008–2011	Assistant Professor of Philosophy, Western Michigan University
2007–2008	Lecturer, Western Michigan University

Education

2008	Ph.D. History and Philosophy of Science, University of Pittsburgh
2005	M.A. Philosophy, University of Pittsburgh
1995	B.A. Philosophy, B.A. Physics, Rutgers University

Grants, Fellowships and Awards (travel & small internal awards omitted)

2023	Research Fellowship, "Avoidance as an Intellectual Strategy: Isaac Newton" (for AY23-24), Charles Taft Research Center. University of Cincinnati.
2022	UC Forward Faculty Award for Transformational Experiential Learning, for PHIL 3095 "Dinosaurs, Dragon, and Dogma", with Joshua Miller (Geological Sciences).

	College of Arts & Sciences nominee for university-wide Distinguished Teaching Professor award.
2021	R21 grant submitted to the National Instituted of Health, with Rebecca Lee (Nursing), Joshua Gross (Biology), and Mao-Bing Tu (Environmental Engineering). "An Interdisciplinary Approach to Loneliness in Older Adults." Not funded.
2019	Co-PI, "An Interdisciplinary Approach to Loneliness in Older Adults", Office of Research Competitive Start-up Funds, with Rebecca Lee (Nursing), Joshua Gross (Biology), and Mao-Bing Tu (Environmental Engineering). ($120,000)
	University Honors Program Discover Undergraduate Research Mentor.
2018	Research Fellowship, "The Changing Role of Geometrical Definition in Newton's Physics and Philosophy" (1-semester), Charles Taft Center Faculty Release Fellowship.
	Selection for 2019-2020 Trans-Disciplinary Research Leadership Council: a year-long 5-person project for disciplinary innovation within UC.
2017	A&S Dean's Award for Teaching Excellence, Runner-Up.
2016	University Research Council Summer Scholarship Grant.
2015	Third Century Faculty Research Fellowship (semester of research leave, salary equivalent).
2014	Research Fellowship, "Organizing the Disciplines" (for AY14-15) , Charles Taft Research Center Fellow.
2013	Summer Research Fellowship, Charles Taft Research Center.
	Publication Costs Award, Charles Taft Research Center
2012	University Research Grant Program.
	Competitive Lecture Award in partial support of 49th Annual Cincinnati Philosophy Colloquium, Charles Taft Research Center.
2010	National Endowment for the Humanities Summer Fellow, Princeton University-July-August 2010, for *Galileo, Descartes, Hobbes: Philosophy and Science, Politics and Religion during the Scientific Revolution*, summer seminar led by Daniel Garber and Roger Ariew.
	Faculty Research and Creative Activities Award, Western Michigan University, for the construction of a visual database for the history of science and philosophy.
	International Education Faculty Development Fund Award, Western Michigan University.
	College of Arts and Sciences Teachings and Research Award, Western Michigan University.
2009	College of Arts and Sciences Teachings and Research Award, Western Michigan University.
2008	Support for Faculty Scholars Award, Western Michigan University.
	The International Education Faculty Development Fund Award, Western Michigan University.
2006	A. W. Mellon Pre-Doctoral Fellowship 2006-2007, University of Pittsburgh
2004	Foreign Language and Area Studies Fellowship 2004-2005, U.S. Department of Education

2003 Foreign Language and Area Studies Fellowship 2003-2004, U. S. Department of Education

Edited Books and Collections

2020 "Newtonianism" section (~60K words), *Encyclopedia of Early Modern Philosophy and the Sciences,* edited by Dana Jalobeanu and Charles T. Wolfe. Springer.

2017 *Oppur Si Muove: Doing History and Philosophy of Science with Peter Machamer,* Springer, with Marcus Adams, Uljana Feest. U., and Jacqueline Sullivan.

2014 *Newton and Empiricism,* Oxford University Press, with Eric Schliesser.

Articles ('*' Denotes Blind Review)

2024 "Working Hypothesis, Mathematical Representation, and the Logic of Theory Mediation in Newton's *Principia*." With Mary Domki, in Chris Smeenk and Marius Stan (eds.), *Theory, Evidence, Data: the Philosophical Legacy of George E. Smith.* Springer, Boston Studies in the Philosophy and History of Science.

"Newton's Regulae Philosophandi," in Chris Smeenk and Eric Schliesser (eds.), *The Oxford Handbook of Isaac Newton.* Oxford University Press.
Published online 2018 at doi: 10.1093/oxfordhb/9780199930418.013.4

2022 "Mechanics in Newton's Wake" with Brian Hepburn, in Dana Jalobeanu and David M. Miller (eds.) *The Cambridge History of Philosophy of the Scientific Revolution*, Cambridge, Cambridge University Press, 293-312.

"Newtonianism: An Introduction," for *Encyclopedia of Early Modern Philosophy and the Science*s, edited by Dana Jalobeanu and Charles T. Wolfe. Springer.

2021 * "Divergence of Values and Goals in Participatory Research." with Dunlap L, Corris A, Jacquart M, Biener Z, Potochnik A. *Studies in History and Philosophy of Science.* 14 (88): 284-291. Special issue: "Values and Pluralism in the Environmental Sciences," Zachary Piso and Viorel Paslaru (Eds.). doi: 10.1016/j.shpsa.2021.06.015.

2020 * "Definitions *more Geometrarum* and Newton's Scholium on Space and Time." *Studies in History and Philosophy of Science* 72 (2): 179-191. doi: 10.1016/j.shpsb.2020.05.005

2017 * "De Gravitatione Reconsidered: The Changing Significance of Experimental Evidence for Newton's Metaphysics of Space." *The Journal of the History of Philosophy* 55 (4): 583–608. doi: 10.1353/hph.2017.0067.

* "The Certainty, Modality, and Grounding of Newton's Laws." With Eric Schliesser. *The Monist* 100 (3): 311–325. Special issue on "Laws of Nature," edited by Angela Breitenbach and Michela Massimi. doi: 10.1093/monist/onx012.

* "From Kepler to Gibson." With Raja Galian, Vicente and Tony Chemero. *Ecological Psychology* 29 (2): 146-160. doi: 10.1080/10407413.2017.1297186.

"Introduction." With Adams, M., Feest, U., and Sullivan J. In *Oppur si Mouve: Doing History and Philosophy of Science with Peter Machamer.* Springer.

2016 * "Newton and the Ideal of Exegetical Success." *Studies in History and Philosophy of Science, Part A* 60: 82-87. doi: 10.1016/j.shpsa.2016.07.001

* "Hobbes on the Order of Sciences: A Programmatic Defense of the Mathematization Thesis." *The Southern Journal of Philosophy* 54 (3): 312–332. doi: 10.1111/sjp.12175

"Issac Newton (1642–1727)." *Routledge Encyclopedia of Philosophy*. Routledge. doi:10.4324/9780415249126-Q075-2

2014 "Introduction." With Eric Schliesser. in *Newton & Empiricism*. Oxford University Press, p. 1-15.

2012 * "Cotes's Queries: Newton's Empiricism and Conceptions of Matter." With Chris Smeenk. In Janiak, Andrew and Schliesser, Eric (eds.), *Interpreting Newton*, Cambridge University Press, 103-137.

2004 * "Galileo's First New Science: The Science of Matter," *Perspectives on Science* 12 (3): 262-287. doi: 10.1162/1063614042795462

* "Pendulums, Pedagogy, and Matter: Lessons from the editing of Newton's *Principia*." With Chris Smeenk. *Science & Education* 13 (4-5): 309-320. doi: 10.1023/B:SCED.0000041825.12956.35

Reprinted in Matthews, M.R., Gauld, C.F. & Stinner, A. (eds.) (2005). *The Pendulum: Scientific, Historical, Philosophical and Educational Perspectives*, Springer, Dordrecht, 127-138. doi: 10.1007/1-4020-3526-8

"Physics." With Peter Machamer. in *Europe 1450 to 1789: Encyclopedia of the Early Modern World*, ed. Jonathan Dewald. New York: Charles Scribner's Sons, Vol 4: 467-473.

2003 "Review of I. B. Cohen and George Smith (eds.) *The Cambridge Companions to Newton*." With Chris Smeenk. In Gary Gutting (ed.) *Notre Dame Philosophical Reviews*.

Works in Progress

"On The Integration of Mathematical and Physical Considerations in Aristotle's Subordinate Sciences." (Available upon request)

Isaac Newton: Philosophical Outsider. (Book project in the writing stage)

Selected Presentations ('*' denotes invited talk)

2024 * "Aristotle on Subordination: A New Interpretation". Johns Hopkins University.

"The Multiple Aspirations of Newtonian Induction". *Canadian Society for History and Philosophy of Science.* June. McGill University.

2023 * "Isaac Newton and the Early Historiography of Mechanics." *The Mechanization of Nature 1300-1700 Conference*. University of Stockholm, Sweden.

* "How Worry about Light Created Modern Physics." *Light and life: From basic science to human wellbeing, art and, architecture.* University of Cincinnati.

2021 "Fitter, Stronger, More General: The Multiple Aspirations of Newtonian Induction." *Philosophy of Science Association 2020 Meeting.* Baltimore.

2020 "The Multiple Aspirations of Newtonian Induction." *HOPOS 2020*. Cancelled due to COVID.

* Panel discussant for University of Cincinnati's Data-Day.

2019 "AI, Skill, and Human Identity." *AI and the Future of (No) Work Colloquium and Talk Competition*. University of Cincinnati. (Winner of 1st prize).

2018 "Newton, Huygens, and the Non-Problematic Status of Induction in the *Principia.*" *Philosophy of Science Association Meeting*. Seattle. Poster Session.

* "When Physics Met Astronomy." *Cincinnati Observatory*.

* "Post-Newtonian Mechanical Philosophy." *Revolutions in the History of Early Modern Philosophy and Science Conference*. University of Iowa. Co-authored with Brian Hepburn.

"A Deflationary Account of Newton's Rule 3." *HOPOS 2018.* Groningen.

"A Deflationary Account of Newton's Rule 3: It's A Rebuke of Huygens and a Defense of Simple Induction." Accepted to the Atlantic Canada Seminar, but could not attend.

"Newton, Huygnes, and the Non-Problematic Status of Induction in the *Principia.*" &HPS7, *Leibniz Universität Hannover*.

"A Deflationary Account of Newton's Rule 3: It's A Rebuke of Huygens and a Defense of Simple Induction." *Early Modern—Saint Louis (EM-STL).* St. Louis.

* "The Changing Range of Geometrical Definition in Newton's Metaphysics of Space." Southwest Philosophy Workshop. *University of New Mexico*.

2017 "The Global, Local and Universal: Tensions of Scale in Newtonian Natural Philosophy (1687-1720). " The *25th International Congress of History of Science and Technology, Rio de Janeiro*.

"Newton on Absolute Space and Geometrical Definitions." *British Society for Philosophy of Science, University of Edinburgh*.

* "Newton on Geometrical Definitions." *Conference on the Occasion of the 50th Anniversary of Howard Stein's "Newtonian Spacetime."* University of Chicago.

* "Newton on Geometrical Definitions." UC Irvine, Department of Logic and Philosophy of Science.

"*De Gravitatione* Reconsidered: The Changing Role of Geometrical Definitions in Newton's Metaphysics of Space." *New York City Workshop in Early Modern Philosophy.* New York.

2016 * Invited workshop participation. *Pittsburgh-Princeton Descartes Day III.*

* "Erasing Hooke from the History of Mechanics," *Colloquium in Honor of the 350th anniversary of Robert Hooke's* Micrographia, University of Wisconsin-Madison.

* "Seeing with the Eyes and 'Seeing' with Math," Department of History of Science, University of Wisconsin-Madison.

2015 * "Organizing the Disciplines," *Taft Research Symposium,* University of Cincinnati.

* "Was Newton's Commitment to Absolute Space Relevant for Physics?" Ohio State University.

2014 "Newton and Galileo (and Hooke)," *The Philosophy of Science Association Bi-Annual Meeting,* Chicago.

* "The Galilean Tradition and Newtonian Mechanics," *Boston Colloquium for Philosophy of Science,* Center for Philosophy & History of Science, Boston University.

"Newton on the Physiology of Perception," *48th Annual Western Michigan University Medical Humanities Conference,* Western Michigan University.

"Substance & Property, System & Relation: Metaphysical Orthodoxy in Newton's Rational Mechanics," *The History of Philosophy of Science Bi-Annual Conference (HOPOS),* Ghent, Belgium.

* "Galileo on the Limits of Human Understanding," Hendrix College.

* "When is something a *thing*? A puzzle about Newton, substance, and space," East Tennessee State University.

2012 * "'We Cannot Say All of Nature is Not Alive': A Physiological Context for Newton's Search for Causes," 49th Annual Cincinnati Philosophy Colloquium: The Life and Mathematical Sciences in Early Modernity, University of Cincinnati.

2011 * "Galileo's Scientific Engagement with Matter Theory (but Not the Matter Theory You Think)," *Experimental Knowledge and the Deep Structure of the World Conference,* Virginia Tech.

2010 "Hobbes on Geometry and the Structure of the Sciences," *Galileo, Descartes, Hobbes: Philosophy and Science, Politics and Religion during the Scientific Revolution*, a National Endowment for the Humanities Summer Seminar led by Daniel Garber and Roger Ariew, Princeton University.

2009 "Cartesian Heterogenous Foundationalism," *Oxford Seminar in Early Modern Philosophy,* University of Oxford.

* "The Classification of Sciences and Foundationalism," *Universidade Estadual de Campinas*, Brazil.

"Behind the Geometrical Method," *Bucharest-Princeton Seminar in Early-Modern Philosophy*. Bran, Romania.

* Invited participation in *Mapping the History and Philosophy of Science,* a workshop sponsored by the National Science Foundation and the James S. McDonnell Foundation, Indiana University.

"Two Dogmas About Newton and Space," *Integrating History and Philosophy of Science Second Annual Conference*. University of Notre Dame.

* "Newton's Empiricism and the Changing Metaphysics of Void," *Lunchtime Talk Series,* Western Michigan University.

2008 "'Other sorts of bodies and another sort of vacuum' : Isaac Newton's Missing Theory of the Void and the Scope of Experimental Philosophy," *Bucharest-Princeton Seminar in Early-Modern Philosophy,* Mălâncrav, Romania.

"Mixed-Mathematics as a Guide to Cartesian Foundationalism," *The History of Philosophy of Science Bi-Annual Conference (HOPOS),* Vancouver, Canada.

Teaching

Graduate Courses:

PHIL 7008	Cartesian Classics	2011
PHIL 7009	Hobbes	2013
PHIL 8019	Newton	2013, 2020

PHIL 8019	The Problem of Induction	2020
PHIL 8019	Philosophical Mechanics in the Age of Reason	2025
PHIL 8031	Mathematics, Reality, and Philosophy	2015
PHIL 5980 WMU	Newton's "De Gravitatione"	2010
PHIL 6100 WMU	Newtonianism and Empiricism	2009
PHIL 6100 WMU	Descartes' *Meditations* and Natural Philosophy	2009
NCSI 7001	Creativity in Science	2021-22 (x2)
NCSI 7002	Technology, Ethics, and Society	2023

Undergraduate:

PHIL 0102	Moral and Political Ideas	2012
PHIL 0261	Philosophy of the Physical Sciences	2011
PHIL 1032	How Science Works	2012-22 (x8)
PSYC/PHIL 1070	The Power of Big Data	2017
PHIL 2042	Science, Magic, and the Occult	2017
PHIL 3023	Philosophy, Science, and Society	2020-22 (x5)
PHIL 3040	Philosophy of Science	2016
PHIL 3062	Rationalism	2012, 2017
PHIL 3063	Empiricism	2016
Plan 3090	How Enlightenment Gave Us the Modern World (study-abroad chaperone, Honors)	2014, 2016
PLAN/PHIL 3093	The Good Life - And How to Live It (Honors)	2017
ENG/PHIL 3094	The Happiness of Pursuit (Honors)	2021
GEOG/PHIL 3095	Dinosaurs, Dragons, and Dogma (Honors)	2022
PHIL 3097	Big Data, Bigger Questions (Honors)	2018, 2020
PHIL 2000	Introduction to Philosophy	2009-11 (x3)
PHIL 3010 WMU	Modern Philosophy	2008-9 (x3)
PHIL 3250 WMU	Scientific and Inductive Reasoning	2010 (x2)
PHIL 3500 WMU	Foundation of the Modern World View	2008
PHIL 3550 WMU	Philosophy of Science	2008-11 (x6)

PhD Committees

Collin Lucken: "Engineering Progress in Science"
Tim Elmo Feiten: "Jakob von Uexküll's Concept of Umwelt as an Account of the Mental"
Mel Andrews: "The Math is Not the Territory: On the Uses & Abuses of Machine Learning & Other Mathematical Modelling Strategies"
Matt Willis: "Why Fallibilism Cannot Save Us: An Expansion of the Epistemic Regress Problem"

Mentorship

Pre-Dissertation Advisor (x2)	2017-2022
Teaching mentor for How Science Works	2023
Teaching mentor for Introduction to Logic	2023
Teaching mentor for Introduction to Philosophy	2015-2016
Teaching mentor for World Philosophy	2017-2019

UHP Discover Summer Mentor:

Benedict Leonardi, "Text Mining on Historical Sources"	2022
Sydney Olszewski, "Loneliness in Older Adults"	2019
Sarah Penne, "Loneliness in Personalized Medicine"	2019
Hoang, Vu Quang, "Topic Modeling"	2019

Exams, Workshops, Misc

Early Modern Qualifying exams author and examiner (x6) 2015-

Syllabus development for "Medicine and the Humanities," a project supported by a College of Arts and Sciences' Innovation Grant. The resulting course is titled "The History of Medicine and the Scientific Revolution."

Writing Academic Articles Workshop, Lead Presenter 2022

Selected for "iPad Cohort" technology and teaching year-long CETL initiative. 2017

Preparation for Job Market & Teaching Portfolio Workshops, Lead Presenter 2014-2021(x6)

Dissertation Proposal Writing Seminar, Lead 2013, 2014

CETL 6-week eLearning Institute for online course design, participant. Resulted in Quality Matters (www.qualitymatters.org) course with 97% score. 2013

Administrative Service to Profession

Past-President, *International Society for the History of Philosophy of Science* 2025-2027

President, *International Society for the History of Philosophy of Science* 2023-2025

Vice-President and President Elect, *International Society for the History of Philosophy of Science* 2021-2023

Editor-in-Chief, *PhilSci-Archive* 2020-2023

Designer and administrator of HOPOS 2020 submission system 2019-2020

Steering Committee, *HOPOS* (elected) 2015-2017

Editorial Co-Chair, *PhilSci-Archive* 2013–2017

Board Member, *PhilSci-Archive* 2008–2017

Local Organizing Committee Chair, Ohio Philosophical Association 2017

Author of major reconstruction of HOPOS website, front- and back-end 2018

Academic Service to Profession

Book Referee (recurring): *Oxford University Press, Routledge, Minnesota Studies in the Philosophy of Science*

Journal Referee (recurring): *Philosophy of Science, Studies in History and Philosophy of Science*, *Erkenntnis*, *Synthese, Australasian Journal of Philosophy, HOPOS: The Journal of the International Society for the History of Philosophy of Science*, *Oxford Studies in Experimental Philosophy*, *Southern Journal of Philosophy*, *Perspectives on Science*, *Science and Education*, *Science & Politics.*

Conference Co-Organizer (Submission, Review, and Programming Platform), HOPOS, Singapore and Hong Kong 2020

Conference Organizer, *The Life and Mathematical Sciences in Early Modernity* (Cincinnati) 2012

Conference Organizer, *Newton and Empiricism*, with Eric Schliesser, Center for the Philosophy of Science, University of Pittsburgh. 2010

Symposium Organizer, "Newton, Mechanics, and Mathematics" *Philosophy of Science Association*. 2014

Symposium Organizer, "Mechanics and its Philosophical Implications in the Aristotelian Tradition," with Andrea Falcon), *HOPOS*, June 2008. 2008

Conference Referee: Southwest Seminar in Early-Modern Philosophy (x2), Newton and Empiricism.

Consultant on 2 films produced by Relativity Media (https://relativitymedia.com)

Service to University

Ethics Bowl Judge	2023
Philosophy Head Search Committee	2022
Taft Fellowship Re-envisioning Committee	2020
Liaison to Canvas rollout	2019-2020
Board Member, Taft Research Center	2017-2020
University Research Council Graduate Fellowship Review Committee	2015-2017
Member, A&S Instructional Innovation Advisory Council	2015, 2016
Taft Research Travel Support Committee (Chair)	2016-2017
Authored UC resources for Common Reading on Michael Sandel's *Justice*	2012-2013
Honor's College Panelist for Honors Courses Workshop	2017- (x4)
Led university-wide faculty workshop in preparation for *Justice*	2013
Taft Center Research Support Committee	2012-2014
University Research Council Fellowship Review Committee	2013, 2017
Course Grade and Program Dismissal Appeal Committee (WMU)	2007-2011
Arts & Science Academic Integrity Committee (WMU)	2008-2011
Department library liaison (WMU)	2010-2011
AAUP representative (WMU)	2009-2011

Service to Department

Diversity, Inclusion, and Wellness Committee	2020-2022
Graduate Studies Committee	2013-14 2019-23
Graduate Professionalization Series (PDP), Speaker	2021-23 (x3)
Chair, Workload Committee	2021-22
Dean's Information Technology Advisory Committee	2017- 2020

Chair, Head's Review Committee	2021
Workload Committee	2021
Pre-dissertation advisor	2020-2021
Workshop on online teaching for graduate students	Aug 2020
Proctor Scholarship Award Committee	2020
Post-doc Search Committee	2018
Organized and ran Works-In-Progress talk series	2013-2014
A&S Information Technology Philosophy Department Liaison	2011- present
Departmental Library Liaison	2012- present
RPT guidelines revisions committee	2012-2017
Undergraduate Studies Committee	2012-2013, 2017
Director of Graduate Admissions (WMU)	2008-2011
Author of 83-page academic program 10-year review and plan, the result of a year-long process of information gathering and analysis, external review, and long-term trajectory planning. (WMU)	2008-2009
Webmaster, coding, administration, upkeep, a major reconstruction of website backend. (WMU)	2007-2011
Job Search Committee (WMU)	2008
Undergraduate Advisor (WMU)	2007-2009

Professional Development

NEH and NIH Grant Writing Seminar, sponsored by Office of Research and Taft Research Center, competitive selection process.	2019
Team Science Basics Workshop, sponsored by Office of Research	2018
Transdisciplinary Research Leadership Program, sponsored by the Office of Research, competitive selection process. Year-long collaborative project with faculty from Nursing, Environmental Engineering, and biological scineces	2018-2019
Participant in Team Science Basics Workshop, sponsored by Office of Research	2018
Participant in UC Libraries Humanities and Technology Camp	2017
Invited Participant in UC Data Day	2017
Participant in Center for Enhancement of Teaching and Learning 6-week eLearning Institute for online course design. Resulted in Quality Matters (www.qualitymatters.org) compliant course, competitive selection process.	2013
Participant in Center for Enhancement of Teaching and Learning Year-Long New Faculty Research and Publication Workshop	2011-2012

Languages

Research and Instruction: English, Hebrew.

Research: Latin, French, Italian.

Business Experience

Head, Network Operations & Customer Service Departments, *Graphnet* (Overseeing employees in Teaneck, NJ; New York, NY; London, UK; Tel Aviv, Israel; Hong Kong, China). *Graphnet* is a provider of cloud-based Enterprise Content Management and Messaging solutions.	2001
Manager, Network Operations, *Graphnet*. (Overseeing employees in Teaneck, NJ; New York, NY; London, UK; Tel Aviv, Israel; Hong Kong, China)	2000–2001
Network Engineer, *Graphnet*	1999 – 2000
Customer Service Representative, *Graphnet*	1997 – 1999