

Name: Sariel Shalev

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CURRICULUM VITAE

1. Personal Details

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2. Higher Education

a. Undergraduate and Graduate Studies

<i>Period of Study</i>	<i>Name of Institution and Department</i>	<i>Degree</i>
1975–1979	Tel Aviv University Department of Archaeology and Near Eastern Cultures	BA (cum laude)
1980–1986	Tel Aviv University Department of Archaeology and Near Eastern Cultures	MA (cum laude)
1989	University of London, UK, Institute of Archaeology	Diploma in Archaeometallography
1987–1993	Tel Aviv University Department of Archaeology and Near Eastern Cultures	Ph.D.

b. Post-Doctoral Studies

<i>Period of Study</i>	<i>Name of Institution and Department/Lab</i>	<i>Name of Host</i>
1992–1996	University of Oxford, Department of Materials and the Research Laboratory for Archaeology	Post-Doc
1997	Oxford Microanalysis for Archaeology	Diploma in applications training course on ISI 300. Qualitative and quantitative chemical analysis with energy dispersive spectrometer on a scanning

		electron microscope
2008	The National Atomic Energy Committee, The Soreq Center of Nuclear Research, Israel	Diploma in X-ray Radiation and Safety

3. Academic Ranks and Tenure in Institutes of Higher Education

<i>Years</i>	<i>Name of Institution and Department</i>	<i>Rank/Position</i>
1996–1997	University of Haifa	Senior lecturer proposed rank
1996–2008	Center of Archaeological Sciences, Weizmann Institute of Science	Senior Scientist (Special appointment)
1997	Departments of Maritime Civilizations and Archaeology, University of Haifa	Senior Lecturer (without tenure)
2002	Departments of Maritime Civilizations and Archaeology, University of Haifa	Senior Lecturer with tenure (conditional tenure implemented)
2003–2006	Head of Israeli Academic Center in Cairo, Egypt	Israel Academy of Science special nomination
*Since 2007	Departments of Maritime Civilizations and Archaeology, University of Haifa	Associate Professor (with tenure)
*Since 2008	Physics Department, Weizmann Institute of Science	Consulting Scientist

Notes: * represents activities and publications since tenure was granted in 2007.

4. Offices in Academic Administration

<i>Years</i>	<i>Name of Institution and Department</i>	<i>Role</i>
1996–1998	Hecht Museum, University of Haifa	Scientific advisor and planning team participant for the display of <i>Metals and Metal production</i>
1998	University of Haifa	Member, Faculty committee for nominating a Lecturer in Department of Eretz Israel Studies

1999	University of Haifa	Member, Faculty committee for nominating a Lecturer in Department of Archaeology
2000	University of Haifa	Member, Faculty committee for nominating a Lecturer in the Department of Maritime Civilizations
2001	Tel Aviv University	Outside examiner of a Ph.D. Thesis in Archaeology
*2007–2010	University of Haifa	Member of the Academic Study Committee, Faculty of Humanities
*2008–2011	University of Haifa	Elected Member of the Senate and the Senate Standing Committee
*2008–2011	University of Haifa	Head of Advanced Academic Studies Committee, Department of Archaeology
*Since 2009	School of Marine Sciences, University of Haifa	Head of Archaeomaterials Analytical Laboratory
*2010	University of Haifa	Responsible for the research connections between the University of Haifa and the Sorbonne, Paris
*2011–2014	University of Haifa	Chair of Department of Archaeology
*2013	University of Haifa	Member of Univ. of Haifa search committee for Geo-Archaeologist position in Department of Maritime Civilizations
*2014	University of Haifa	Member of promotion committee in the Department of Maritime Civilizations

5. Scholarly Positions and Activities outside the University

<i>Years</i>	<i>Memberships in Academic Professional Associations</i>
Since 2000	The World Archeometallurgy Group (internet-based)
2009-2013	Member and representative of the University of Haifa in the National Inter-Senate Committee of Academic Institutes in Israel.

<i>Years</i>	<i>Editorial Assignments</i>
<i>Not App.</i>	

<i>Years</i>	<i>Reviewing for Refereed Journal</i>
1998	Reviewer of two scientific papers published in the volume of the International Symposium <i>Metals in Antiquity</i> , Harvard University, U.S.A.

2000	Reviewer of a paper on Chalcolithic metals for <i>'Atiqot</i> , Journal of the Israel Antiquities Authority, Jerusalem.
2000	Reviewer of a paper on ancient metallurgy for <i>Journal of Archaeological Science</i> , Stanford University, U.S.A.
*2011	Reviewer of a paper in archaeometallurgy for the <i>Journal of Archaeological Sciences</i> , Stanford University, U.S.A.
*2013	Reviewer of a paper in archaeometallurgy for the <i>Journal Archaeometry</i>
*2013	Reviewer of an article on metallurgical practices for <i>Levant</i>
*2014	Reviewer of an article on metallurgical practices in the Bronze Age for the <i>Bulletin of the American Schools of Oriental Research</i>
*2015	Reviewer of a paper in archaeometallurgy for the <i>Journal Archaeometry</i>
*2015	Reviewer of a paper in archaeometallurgy for the <i>Journal of Near Eastern Studies</i>
*2015	Reviewer of a paper in non-invasive archaeometallurgical approach for <i>Microchemical Journal</i>
*2016	Reviewer of a paper in archaeometallurgy in Iran for the publication of archaeometallurgy in Europe, Madrid, Spain

Years	Reviewing for Fund Agencies
2000	Reviewer of research grant application in the field of archaeology for the Israel Science Foundation (ISF)
2002	Reviewer of research grant application in the field of archaeology for the German-Israeli Foundation for Scientific Research and Development (GIF)
2005	Reviewer of research grant application in the field of geo-archaeology for the Israeli Science Foundation (ISF)
*2010	Reviewer of a research Grant application in the field of Archaeological Sciences for the Israel Science Foundation (ISF), Bikura program
*2011	Reviewer of a grant application in Archaeology for the National Geographic Foundation, U.S.A.
*2012	Reviewer of a research grant application in the field of archaeological sciences for the Israeli Science Foundation (ISF).
*2012	Reviewer of a grant application in Archaeology for the National Geographic Foundation, U.S.A.
*2014	Reviewer of FWF grant application in Archaeometallurgy for the Austrian Academy of Science

Years	Scholarly Positions outside the University
2003-2006	Director of the Israeli Academic Center in Cairo (Egypt), special nomination by the Israeli Academy of Science and Humanities

*2010	Reviewer of the new MA/MSc program in Archaeological Sciences, Tel Aviv University
*2012	Reviewer for a tenure-track position in Tel Aviv University
*2013	Member of the scientific academic committee and responsible for the archaeological sciences section, for the International conference of Biblical Archaeology, Jerusalem.
*2014	Reviewer for CNRS position in archaeology at the Sorbonne, Paris, France.
*2015	Member of the scientific academic committee for the international conference Archaeometallurgy in Europe, Madrid.
Years	Public Role
*Since 2012	Chairman of Board of Directors , the <i>Cinematheque</i> , Rosh-Pina

6. Active Participation in Scholarly Conferences

a1. International Conferences - Held Abroad

Date	Name of Conference	Place of Conference	Subject of Lecture/ Discussion	Role
1989	The Discovery of Metals	Musée des Antiquités Nationales, CNRS, Saint Germain en Laye, France	Two Different Copper Industries in the Chalcolithic Culture of Israel	Lecture
1990	International Symposium Chayonu and the Beginning of World Metallurgy	Max Planck Institut, Ringberg, Germany	Chalcolithic Metallurgy and the Hoard of Nahal Mishmar	Invited paper
1991	Outils et ateliers d'orfèvres, International Symposium	Musée des Antiquités Nationales, CNRS, Saint Germain en Laye, France	The Earliest Gold Artifacts in the Southern Levant Reconstruction of the Manufacturing Process	Invited paper
1992	Archaeometallurgy in the Ancient Near East	Special Conference Institute of Archaeology, University College, London, UK	Changes in Copper Metallurgy from the Chalcolithic Period to the Early Bronze Age	Invited paper
1993	Early Iron Working, Special Symposium,	Snowdonia National Park Study	Prehistoric Metals in Israel	Paper

	Plas Tan yuBwlch, Maentwrog	Centre, UK		
1994	Special Conference. The Beginning of Specialized Production and Exchange in the Ancient Near East: Current Work in Britain	Durham University, UK	The Change in Metal Craft Specialization from the Chalcolithic period to the Early Bronze Age - and the Beginning of Copper Smelting in Timna, Feinan and Southern Sinai	Invited paper
1994	The Third International Conference on the Beginning of the Use of Metals and Alloys	Sanmexia, China	Metal Craft Specialization and the Urbanization in 4th-3rd Millennium BC, Israel	Paper
1994	Archaeometry 94, International Symposium on Archaeometry, METU & TUBITAK	Ankara, Turkey	Archaeometallurgy in Israel: Impact of the Material on the Choice of Shape, Size and Color of Ancient Products.	Paper
1995	The International Symposium on the Beginning of Metallurgy	DMT and Max Planck Institut, Bochum, Germany	Recasting the Nahal Mishmar hoard: Experimental archaeology and metallurgy	Invited paper
1996	Materials Issues in Art and Archaeology V	MRS, Boston, MA, USA	Metal nails used in the construction of a ship 2400 years ago: A case study in production, utilization and conservation	Paper
1997	The Material Research Society International Conference. Special Session: Geochemistry and Archaeology	American Chemical Society, San Francisco, CA, USA	Corrosion Processes of Copper in an Archaeological Marine Environment	Invited paper
1999	Founders, Smiths and Platers: An International Conference on Metal Forming and Finishing	Department of Materials, Oxford University, UK	The Hittite Dagger from Berth Shean	Paper

2000	Wadi Faynan Conference 2000	Council for British Research in the Levant, Jordan	Chalcolithic copper sourced-material and end-products: Early trade between Israel and Jordan	Paper
2000	The social context of technological changes	University of Oxford, UK	Middle Bronze age metal production in the Eastern Mediterranean: an indicator of socio-economic complexity	Paper
2000	Metals and Society, Session and Round Table. 6th Annual Meeting European Association of Archaeologists	Lisbon, Portugal	Aspects of Islamic metallurgy	Paper
2001	4th International Symposium on Eastern Mediterranean Geology	Suleyman Demirel University, Turkey	Could earth and material science clarify what people did 5300 years ago on the coast of Ashkelon, Israel?	Paper
2001	The XIVth Congress of the International Union of Prehistoric and Protohistoric Sciences	Liège, Belgium	Traditional metal workshop as ready-made lab for experimental archaeology	Paper
2002	The 3rd International Congress on the Archaeology of the Ancient Near East	CNRS and University of Paris – Pantheon Sorbonne, Paris	Evolution of socio-economic structures in the Southern Levant: The early metallurgical perspective	Paper
2003	International Conference: Archaeometallurgy in Europe	Milan, Italy	How could have the Chalcolithic people from southern Israel produced their copper tools, more than six thousand years ago?	Paper
2004	The Xth Annual Convention of the European Association of Archaeologists	Jean Moulin University, Lyon, France	A new dating method for lead by measuring the corrosion content by Meissner	Paper with S. Reich and G. Leitus

			response in the superconducting state.	
2005	Metallurgy – A touchstone for cross-cultural interaction	The British Museum, London, UK	Superconductivity in the service of archaeology: A new dating method for lead artifacts	Paper with S. Reich and G. Leitus
2005	Colloquium Spectroscopicum Internationale XXXIV	Antwerp, Belgium	XRF study of archaeological and metallurgical material from an ancient copper smelting site near EinYahav, Israel	Paper with S. Shilstein and Y. Yekutieli
2006	The 36th International Symposium on Archaeometry	Quebec, Canada	Superconductivity in the service of archaeology: A dating method for lead artifacts	Paper with S. Reich and G. Leitus
*2007	The 2nd International Conference, Archaeometallurgy in Europe 2007. Archaeometallurgy in age of complexity: Metal artifacts production and distribution in the Levant during the Middle Bronze Age II	Aquileia, Italy	XRF study of slag and charcoal in Timna (Israel)	Poster with S. Shilstein and Y. Yekutieli
			What are we analyzing? Do we measure the same thing or are we sometimes like ‘blind men’ touching different parts of the same ‘elephant’?	Paper
*2008	The 37th International Symposium in Archaeometry	Siena, Italy	XRF analysis of 3800 years old flat shaft-hole axes from the M.B.II cemetery of Rishon Le-Zion near Tel-Aviv, Israel	Poster with S. Shilstein and Y. Levy
			Metal production in Israel during the	Poster with S.

			Persian period: Archaeometallurgical and geomettallurgical research	Kamil
			Superconductivity in the service of Archaeology; A method for dating lead artifacts	Poster with S. Reich & G. Leitus
*2009	The 7th International Conference on the beginning of the use of metals and alloys	Bangalore, India	The forging of Israel: Archaeometallurgical evidence of Early Iron Age metal production in the Land of the Bible	Paper
*2009	Archaeometallurgy: Technological, economic and social perspectives in Late Prehistoric Europe	Madrid, Spain	Craft specialization and organization of metal production in the Bible and in archaeometallurgical research in the land of the Bible	Opening lecture
			Study of internal structure of M.B. Age cast axes by N.D. and N. Radiography	Poster with E. Caspi, S., Shilstein et al.
*2010	The XXI Workshop on Neutron Scattering	Kurchatov Institute, Moscow, Russia	Neutron diffraction in archaeology	Invited Paper
			Study of Bronze Age cast axes by neutron radiography and neutron diffraction using synchrotron radiation and neutron scattering	<u>Invited Paper</u> with E. Caspi, S. Shilstein, et al.
*2011	International Symposium on History, Technology and Conservation of Ancient Metals, Glasses and Enamels	Demokritos Institute of Materials Science and the National Technical University of Athens, Greece	Archaeometallurgy in the Levant: Past, present and some thoughts about the future	Paper
			The peculiar story of Middle Bronze	Poster with E.

			Age II battle-axes from the Southern Levant	Caspi , S. Shilstein, A. Paradowska, W. Kockelmann, Y. Levy
*2011	Archaeometallurgy in Europe III, 3rd International Conference,	Deutsches Bergbau-Museum Bochum, Germany	Comparison of compositional variations in modern European bronze coins with variations in some ancient coins	Chairing session & Poster with S. Shilstein
*2012	International Conference on Diagnostic Techniques in Conservation Science of Works for Art	Thessaloniki University, Greece	What are we really looking at? XRF and neutrons diffraction analyses of Middle Bronzer Age artifacts from the southern Levant	Invited to Chair and to present a paper
*2012	39th International Symposium on Archaeometry, ISA 2012	Leuven, Belgium	Investigation of cooper alloy axes from the Carpathian Basin	Poster with I. Ordentlich, T. Kovacs, K.T. Biro and F. Gogaltan
			Composition and microstructure of silver from hoards in Tel Beth-Shean, Tel Dor and Tel Migne	Poster with S. Shilstein and D. Shechtman
*2014	40 th International Symposium on Archaeometry	Los Angeles	Copper Smelting Technologies at Nahal ‘Amram, Southwest ‘Araba Valley, Israel	Poster with S. Shilstein and U. Avner
*2015	4th Archaeometallurgy Symposium in Europe	Madrid, Spain	How Theophillus, Cyril Smith, and Oppy Untracht Help Describing The History of A Byzantine Metal Object From The Holy Land.	Paper
*2015	4th	Madrid, Spain	Comparative Study	Paper with

	Archaeometallurgy Symposium in Europe		of Slags from two different Copper Smelting sites in the Southern 'Araba Valley, Israel.	S. Silshtein U. Avner and T. Kan-Zipor
			The life and afterlife of a Byzantine weight from Antiochia Hippos (Sussita) in Syria-Palaestinae	Paper

a2. International Conferences - Held in Israel

<i>Date</i>	<i>Name of Conference</i>	<i>Place of Conference</i>	<i>Subject of Lecture/Discussion</i>	<i>Role</i>
1990	2 nd International Congress on Biblical Archaeology	Jerusalem	Metal Production and Society at Tel Dan	Paper
*2007	International Symposium in Material Science celebrating Prof. Enrique Grunbaum's 80 th Birthday	Institute of Materials, Tel Aviv University	Recasting the Past: Archaeometallurgical study of the earliest metal hoard in the world	Key Note Speaker & Invited paper at the gala-dinner in honor of Enrique Grunbaum
*2008	ART 2008 9 th International Conference	Jerusalem	XRF analysis of ribbed daggers from the M.B. II 'Warrior' tombs in the Cemetery of Rishon Le-Zion, Israel	Paper with S. Shilstein and Y. Levy
			Non-destructive neutron diffraction study of internal structure of archaeological metal artifacts from Israel	Paper with E. Caspi, O. Rivin, H. Ettedgui, M. Peilstoucker, S. Shilstein
*2010	The transition from late Chalcolithic to Early Bronze in	Centre de Recherche Français, Jerusalem	Observations on South Levantine Chalcolithic and Early Bronze Age metallurgy	Invited paper

	the southern Levant. International workshop			
*2012	1 st International Conference on Timna Park Studies.	Timna	Archaeometallurgy in Israel: Past, present and a few thoughts about the future	Invited paper
*2013	Mining for Copper International Conference	Timna, Israel	Copper and Trade in the Southern Levant Compositional Analysis of Slags from Nahal 'Amram	Paper with S. Shilstein and U. Avner

a3. Local Conferences

<i>Date</i>	<i>Name of Conference</i>	<i>Place of Conference</i>	<i>Subject of Lecture /Discussion</i>	<i>Role</i>
1990	The Annual Conference of the Israel Geological Society	Eilat, Israel	Archaeometallurgy: Ancient metal industries and products	Paper
1992	Chemistry in Archaeology II	Weizmann Institute of Science, Israel	Archaeometallurgy – Archaeology of Ancient Technology	Paper
1995	The 29 th Annual Meeting of the Israel Society for Microscopy	Tel Aviv, Israel	Archaeology under the Microscope	Invited Lecture
1998	Recycling, Hoarding and Trade in Bronze Age	Israel Science Foundation and University of Haifa	Can Recycling be Identified by Metallurgy?	Invited Lecture
1998	The 24 th Archaeological Congress	Israel Museum, Jerusalem	On the discussion panel: New aspects in the research of the Proto-Historic periods of Israel	Invited Lecture
1999	From Avaris to Pi-Ramesse; Hyksos and Ramesside Capitals in the	Department of Bible and Ancient Near Eastern Studies, Ben	The metal production in Middle Bronze Age Israel	Invited panel discussion

	Delta	Gurion University		
2000	ETH/RPFL-WIS Forum on Advanced Materials International Conference	Weizmann Institute of Science	Because of a nail...	Key Note Speaker & Invited conference dinner talk
2000	The Mediterranean: Culture, Environment and Society	International Colloquium, University of Haifa	The archaeology of Islamic metals and the anthropology of traditional metal casting in Cairo today	Lecture
2001	The 66 th Meeting of the Israel Chemical society	Tel Aviv	Metals of late Bronze and Early Iron Age Palestine	Invited Lecture
2001	Settlement, Civilization and Culture	Bar Ilan University	What did the EB I People do on the coast of Ashkelon?	Invited Lecture (in Hebrew)
2002	The 28 th Archaeological Congress	University of Haifa	The EB I copper industry in Ashkelon Marina	Lecture
2003	The 68 th Meeting of the Israel Chemical Society	Tel Aviv	Iron Age metallurgy in Israel	Invited special Lecture
*2008	The 34th Israeli Archaeological Conference	Jerusalem	The role of chemical analysis in the understanding of spatial and temporal distribution of Middle Bronzer Age metal artifacts	Invited Lecture (in Hebrew)
*2009	The 35th Israeli Archaeological Conference	Jerusalem	Pottery XRF Analysis in the field	Lecture with S. Shilstein, I. Sharon and A. Gilboa (in Hebrew)
*2009	The 14th Israel Materials engineering Conference	Tel Aviv University, Israel	Compositional variations in European coins as a control model for archaeometallurgy	Paper with S. Shilstein
			XRF Analysis of pottery in the field during excavations	Lecture with S. Shilstein and A. Gilboa
*2010	The 11th ISRA-NDT	Tel Aviv	Nondestructive analysis and the Bible	Key Note Speaker &

	National Conference			Invited opening plenary lecture (in Hebrew)
*2015	The 18 th Annual Meeting of the Israel Analytical Chemistry Society	Tel Aviv	Why are Scientists Afraid of Portable ED-XRF Analysis in Art and Archaeology	Invited Paper

b. Organization of Conferences or Sessions

<i>Year</i>	<i>Name of Conference</i>	<i>Place of Conference</i>	<i>Subject of Conference/ Comments</i>	<i>Role</i>
1998	Research workshop on Recycling, hoarding and trade in Bronze	Israel Science Foundation and University of Haifa	Metals and Metallurgy during the 13-11 Centuries CE. Invited: Prepare and Direct field experiment of casting Late Bronze age ingots	Session Chairman
1999	'Mare Nostrum'	University of Haifa	Archaeology	Session chairman on archaeological session
2001	University of Haifa	Center for Marine Studies	Workshop: Petrography and metallography microscopy	Co-Run workshop with Prof. Y. Mart and Dr. D. Sivan
2005	Cairo, Egypt Weizmann Institute of Science	The Israeli Academic Center in Cairo Center for Archaeological Sciences	Ethno-Archaeology in Egypt	Organizing and directing, with Prof. S. Weiner, a one-week workshop
2006	Cairo, Egypt ICOMOS	The Israeli Academic Center in Cairo – with the help of the Egyptian Supreme Council of Antiquity, Agha-Khan	Conservation and Restoration of Islamic Cairo	Organizing and directing, with Prof. S. Shamir and D. Shamir, this 3-day workshop

		Foundation and the American Research Center in Cairo		
2006	Jerusalem	International workshop in The French Research Center	Techniques and People	Session Chairman and invited paper
*2008	National conference	Hecht Museum, University of Haifa	Workshops in the Ancient World	Session Chairman
*2009	The 7 th International Conference on the Beginning of the Use of Metals and Alloys	Bangalore, India	The forging of Israel: Archaeometallurgical evidence of Early Iron Age metal production in the Land of the Bible	Session Chairman
*2009	The 14 th Israel Materials Engineering Conference	Tel Aviv University, Israel	XRF Analysis of pottery in the field during excavations	Co-Session Chairman with Prof. Y. Goren
*2010	University of Haifa	Archaeomaterials Laboratory. One-day workshop	International Course in Conservation of the Israel Antiquities Authority, Haifa, Israel	Organizing and directing workshop
*2010	Centre de Recherche Français, Jerusalem	The transition from late chalcolithic to Early Bronze in the southern Levant. International workshop	Observations on South Levantine chalcolithic and Early Bronze Age metallurgy	Session Chairman
*2012	1 st International Conference on Timna Park Studies.	Timna, Israel	Archaeometallurgy in Israel: Past, present and a few thoughts about the future	Session Chairman
*2012	International Conference on Diagnostic Techniques in Conservation Science of Works for Art	Thessaloniki University, Greece	What are we really looking at? XRF and neutrons diffraction analyses of Middle Bronzer Age artifacts from the southern Levant	Invited to Chair and Panel the proceedings
*2012	University of Haifa and Sorbonne,	University of Haifa	Workshop of mutual research opportunities	Organized, planned and

	Paris		in humanities	chaired
*2013	Mining for Copper International Conference	Timna, Israel	Copper and Trade in the Southern Levant	Session Chair
*2013	Kingdoms of David and Solomon	University of Haifa	The 'Araba, Negev and Northern Israel	Session Chair
*2014	30 Anniversary of Hecht Museum	University of Haifa	Archaeology of Israel	Session Chair

7. *Invited Lectures (Others than in Scholarly Conferences)*

Abroad

<i>Year</i>	<i>Name of forum</i>	<i>Place of Lecture</i>	<i>Subject of Lecture</i>	<i>Role</i>
1996	American School of Classical Studies, Athens, Greece	Special Annual Wiener Lecture	Implications of Quantitative Analysis and Metallography on Reconstructing the Past	Invited lecture
1996	Department of Archaeological Sciences	University of Sheffield, UK	Metallurgy in the Ancient Near East	Invited to conduct special workshop
1999	Series of Lectures	The Israeli Academic Center in Cairo, Egypt	Ancient Metallurgy in the ancient Near East	Two invited special guest lectures
2000	First Euro-Mediterranean expert meeting on prehistoric archaeometallurgy	CNR-SMED, Inst. Univ. Suor Orsola Benincasa, Italy	The Current State of Research in Prehistoric Archaeometallurgy in Israel	Invited to participate
2004	Series of Lectures	The Israeli Academic Center in Cairo, Egypt	The Coming of the Age of Iron: Biblical story, archaeological discoveries and science	Invited Lecture
2004	Series of Lectures	The Egypt Exploration Society, Cairo, Egypt	Early Islamic Metallurgy	Invited Lecture
*2008	The Israeli Academic Center in Cairo	Cairo, Egypt	Archaeological evidence and the Bible: Did the Hebrew patriarchs go from Canaan to Egypt?	Invited lecture
*2011	Maison Rene-Ginouves	CNRS, Paris, France	The Beginning of Metallurgy in the	Invited lecture

	Archeologie & Ethnologie		Southern Levant	
*2011	Special seminar	University of Dijon, France	Chalcolithic metallurgy in the Levant	Invited paper
*2011	Special seminar	University of Bordeaux, France	Middle Bronze Age metallurgy in the Levant	Invited paper
*2012	3-day Special workshop on Indonesian metal hoard	Blera and Rome, Italy	Experimental Archaeometallurgy and the Goa-made artifacts	Invited as part of the scientific team and panel
*2015	2-day Special workshop on ROXINA project of Ancient Indo-Asia Pottery & metals.	Mannheim Archaeometry Lab, Germany.	The concept, special analytical protocol and the meaning of the XRF pottery analysis results.	Invited as part of the scientific team and panel
*2015	Special seminar	University of Padova, Italy	Archaeometallurgy in the Levant: past, present and a few thoughts about the future	Invited special seminar in Department of Geophysics & Department of Cultural Heritage
*2015	Special seminar	University of Lecce, Italy	Archaeometallurgy in the Israel: current state and prospects.	Invited special seminar in Dep. of Archaeology
*2015	Special seminar	University of Lecce, Italy	Why are Scientists Afraid of ED-XRF Analysis in Art and Archaeology?	Invited special seminar in Department of Archaeology

In Israel

<i>Year</i>	<i>Name of Forum</i>	<i>Place of Lecture</i>	<i>Subject of Lecture</i>	<i>Role</i>
1998	The 24 th Archaeological Congress	Israel Museum, Jerusalem	On the discussion panel: New aspects in the research of the Proto-Historic periods of Israel	Invited paper
1999	From Avaris to Pi-Ramesse; Hyksos and Ramesside Capitals in the	Department of Bible and Ancient Near Eastern Studies, Ben	The metal production in Middle Bronze Age Israel	Invited panel discussion

	Delta	Gurion University		
1999	Faculties of Humanities and Social Sciences	University of Haifa	Knife in the water: Metal and wood in anoxic and anaerobic conditions	Initiated, prepared and conducted a national multidisciplinary workshop
2000	International conservation course of I.C.C.R.O.M.	Weizmann Institute of Science	Analytics	Invited to prepare, direct and conduct analytical day
2000	40 years of Archaeology in the Timna Valley and the Southern Araba	Yad Ben Zvi and the Hebrew University, Jerusalem	Metal extraction and production in Israel during the 4 th Millennium BC	Invited paper
2000	ETH/RPFL-WIS Forum on Advanced Materials International Conference	Weizmann Institute of Science	Because of a nail...	Invited conference dinner Lecture
2001	The 66 th Meeting of the Israel Chemical society	Tel Aviv	Metals of late Bronze and Early Iron Age Palestine	Invited Lecture
2001	Settlement, Civilization and Culture	Bar Ilan University	What did the EB I People do on the coast of Ashkelon?	Invited talk (Hebrew)
2002	Center for Maritime Studies	University of Haifa	The Middle Bronze Age in the Levant	Invited to present a paper at national workshop
2003	The 68 th Meeting of the Israel Chemical Society	Tel Aviv	Iron Age metallurgy in Israel	Invited special paper
2004	Department of Environmental Science	Weizmann Institute of Science	Materials in Archaeology	Invited to present a paper in this national workshop
*2007	Excavations in the 'Mushroom' site, Timna	Ben Gurion University	Lecture with Y. Yekutieli and T. Gini (in Hebrew)	Invited paper
*2007	The Philistine sword and the Israelite pick in Iron Age I Israel	Eretz Israel Museum, Tel Aviv	Lecture	Invited Lecture
*2007	International Symposium in Material Science	Institute of Materials, Tel Aviv	Recasting the Past: Archaeo-metallurgical study	An invited gala-dinner lecture in honor of

	celebrating Prof. Enrique Grunbaum's 80 th Birthday	University	of the earliest metal hoard in the world	Enrique Grunbaum
*2008	The 34 th Israeli Archaeological Conference	Jerusalem	The role of chemical analysis in the understanding of spatial and temporal distribution of Middle Bronze Age metal artifacts	Invited paper (in Hebrew)
*2008	Workshop	Israel Antiquities Authority, North Section	XRF in Archaeology	Invited lecture
*2009	Department seminar, Department of Archaeology	Tel Aviv University	Archaeometallurgy of the Middle Bronze Age	Invited lecture
*2009	Diplomatic Group Lectures, Department of Archaeology	Tel Aviv University	Metal in the Bible	Invited lecture
*2009	Faculty of Materials Engineering	The Technion – Israel Institute of Technology	Metals in the beginning of the Iron Age	Invited to present a seminar
*2010	The 11 th ISRA-NDT National Conference	Tel Aviv	Nondestructive analysis and the Bible	Invited opening plenary lecture (in Hebrew)
*2011	Inter-University Center, Eilat		XRF analysis of marine sediments	Invited to present a paper and conduct a study
*2012-2013	School for tour guides	Univ. of Haifa Port Campus	4 lectures on the state of the archaeology of Israel	Invited lectures and museum tour
*2013	The Weizmann Special Lectures Program of Science in Art and Archaeology	The Weizmann Inst. of Science	The Beginning of Metallurgy in Israel	Invited special lecture
*2014	The Tel Hazor – Archaeological Group	Kibutz Mahanaim	The history of metal production and utilization in the Levant	Invited guest lecture
*2014	The Univ. of Holy Land Studies, Jerusalem	School for Marine Sciences, University of	Special Study Day and Laboratory Workshop in Archaeological	Invited lectures and lab workshop

		Haifa	Sciences	
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8. Colloquium Talks (selection of 1-2 per year out of talks conducted)

<i>Year</i>	<i>Presentation</i>	<i>Place of Lecture</i>	<i>Name of Forum</i>
1989-1992	Ancient Metallurgy and Archaeology	Departments of Archaeology at Tel Aviv University; The Hebrew University, Jerusalem; Ben Gurion University, Beer Sheva	Invited department seminars
1993	Archaeometallurgy	Oriental Institute, University of Oxford, UK	Archaeometallurgy of the Near East
1994	Ancient Metallurgy in Israel	University of Oxford, UK	Archaeometallurgy in Israel
1994	Experimental Archaeology and Metallurgy	Department of Archaeology, Ashmolean Museum, University of Oxford, UK	Departmental Seminar
1995	Resources, Technology and Products in ancient metallurgy	Department of Environmental Science, Weizmann Institute of Science	Departmental Seminar
1996	Recasting the Past –	Department of Structural Biology, Weizmann Institute of Science	Biom mineralization Research Group
1997	Beginning of the Use of Metals	Faculty of Chemistry, Weizmann Institute of Science	Faculty Seminar
1998	Chemical and Metallurgical Analysis of old nails	Faculty of Exact Sciences, School of Chemistry, Tel Aviv University	Chemical Physics Seminar
1998	The Ancient Production of Copper in Feinan and Timna	The Hebrew University, Jerusalem	Interdisciplinary advanced seminar in the Archaeology and Geology of Trans-Jordan
1999	Feinan and the Ancient Extraction of Cooper	Department of Marine Studies, University of Haifa	Interdisciplinary seminar
1999	Ancient Metallurgy in Cyprus	Institute of Archaeology, The Hebrew University, Jerusalem	Field course in Cyprus

2000	The Technology of metal artifacts in the archaeology of Israel	Department of Archaeology, Tel Aviv University	Department seminar
2001	Archaeometallurgy, Timnah and Feinan	Department of Archaeology, Ben Gurion University	Invited seminar
2001	Archaeometallurgy in the lab and field	Israel Antiquities Authority, Weizmann Institute of Science	Invited colloquium talk
2002	The sand-casting foundry in Cairo as a living experimental archaeological lab	Department of Archaeology, Tel Aviv University	Invited department seminar
2003	Early Bronze metallurgy	Department Seminar, Engineering-Materials Center, Department of Engineering, Tel Aviv University	Invited seminar
2003	Metal Analysis and Conservation	The Israel Museum, Jerusalem	Invited seminar – for curators and scientific staff
2004	Early Islamic Metallurgy	Cairo, Egypt	Invited lecture – The Egyptian Exploration Society
*Since 2004	At least twice a year...	Different University Departments in Israel and abroad	Invited talks

9. Research Grants

a. Grants Awarded

Role in Research	Other Researchers (Name & Role)	Title	Funded by (C= Competitive Fund)	Amount	Year
PI		Archaeometallurgy in Shiqmim	The Vice President for Research and development, Tel Aviv University and The Joe-Alon Regional Center		1985
PI		Iron Age metals from Tel Dan	C - The Anglo-Israeli Archaeological Society		1987
PI	Prof. Y. Mart (Co-PI) and Dr. E. Marcus (Co-PI)	Infrastructure grant	C- For laboratory in the University of Haifa	\$46,000	1996
PI		Archaeometallurgy	C- The National Centre for cooperation between Sciences and Archaeology, Israel	\$7,500	1996-1997
PI	Prof. A. Brokman (Co-PI) and Dr. S. Cohen (Co-PI)	Ancient gold dating	C- The National Center for cooperation between the Sciences and Archaeology, Israel	\$10,000	1998
PI		Arch Lab	The Dean of Research, University of Haifa	NIS 15,500	1998-1999
PI		Infrastructure grant	For metallographic laboratory in University of Haifa. The Dean of Chemistry Department and Head of Archaeology Science Center, Weizmann Institute of Science	<i>circa</i> \$15,000	2000
PI		Lab & Research assistance	The Center for Archaeological Sciences, Weizmann Institute	\$8,000	2000-2001

PI	Prof. I. Ordentlich (Co-PI)	Scientific exchange program	C- The Israel Academy of Sciences and Humanities and the Hungarian Academy of Science	<i>circa</i> \$6,000	2000-2001
PI	P Prof. I. Ordentlich (Co-PI)	Support for pilot research in Hungary and Romania	The Dean of Research and the Dean of Humanities, University of Haifa	<i>circa</i> NIS 4,500	2001
PI		Metals of Early Iron Age Palestine: Production and Utilization in an Ethno-Political Diversity	C- The Israel Science Foundation, Israel Academy of Sciences	\$43,000 per annum x 3 yrs = \$129,000	2001-2004
PI		Infrastructure grant for a movable XRF analyzer to be used in the field for on-site, on-time sediments and chemical analyses	The Dean of Chemistry Faculty, Head of Metallurgical Department and Head of Center for Archaeological Sciences, Weizmann Institute of Science	\$20,000	2003
PI		Infrastructure grant for a sand blaster for the Institute of Maritime Studies	The Dean of Research, University of Haifa	\$10,000	2003
Head of IAC		Infrastructure grant for computerizing and air-conditioning the three libraries of Jewish heritage near the synagogues in Cairo	Private donation	\$8,000	2005
PI	Dr. Y. Kahanov (Co-PI) and Prof. Y. Mart (Co-PI)	Infrastructure grant. Analytical lab for archaeological and geological finds from underwater research.	C- The Israel Science Foundation – Converging Technologies Equipment, Israel Academy of Sciences	\$220,000	*2008
PI		Production and distribution of metal weapons in the southern Levant during the Middle Bronze	Research Authority prize for “Very Good” score	NIS 6,000	*2009

		Age			
PI		Pilot research in traditional technologies in Akko.	C- The Arab-Jewish Center, University of Haifa	NIS 3,000	*2010
Contributor from non-French Inst.	In the French team headed by Prof. H-P. Frankfort	Project ROXIANA (franco-allemand en sciences humaines et sociales) research grant – as a contributor	C- Archaeological research on the metallic and pottery assemblages from the Oxus Basin to the Indus Valley during Protohistory	€60,000 for my part in the project	*2011-2014
PI		Infrastructure grant towards purchasing new analytical equipment for archaeological materials research	C- Braginskyi Center – Weizmann Institute of Science	\$20,000	*2013
PI		Ancient Mining and Production of Copper at Nahal ‘Amram, Southern ‘Araba, an Interdisciplinary Study	C- The Israel Science Foundation, Israel Academy of Sciences	920,000 NIS	*2014-2017

b. Submission of Research Proposals – Pending

<i>Role in Research</i>	<i>Other Researchers (Name & Role)</i>	<i>Title</i>	<i>Funded by (C= Competitive Fund)</i>	<i>Years</i>
<i>Not App.</i>				

c. Submission of Research Proposals – Not Funded

<i>Role in Research</i>	<i>Other Researchers (Name & Role)</i>	<i>Title</i>	<i>Funded by (C= Competitive Fund)</i>	<i>Years</i>
PI		Non-destructive Neutron Diffraction Study of Internal Structure of Archaeological Metal Artifacts from Israel	C- ISF – Israel Science Foundation, Bikura	2007
PI		Production and distribution of metal weapons in the southern Levant during the Middle Bronze Age	C- ISF – Israel Science Foundation	2008
PI		Production and distribution of metal weapons in the southern Levant during the	C- ISF – Israel Science Foundation	2009

		Middle Bronze Age		
PI		Quantifying the renewable energy potential of the shallow marine gas system offshore Israel	C- ISF – Israel Science Foundation Bikura	2010
PI		Compositional Relationships in Ancient Silver and Gold Coins from Archaeological Excavations in Israel	C- ISF – Israel Science Foundation	2012
PI	Research Grant Prof. Sarel Shalev and Prof. Walther Sallaberger- Proposed Directors	Modern and Ancient Handcrafts: Towards Novel Understating of the development of ancient, traditional and modern technologies. Other in the research: Dr. Irit Ziffer, Dr. Etan Ayalon, Dr. Assaf Yasur Landau, Prof. Mahmud Yazbak, Yeshu Dray, Dr. Kamil Sari, Dr. Nimer Taha, Prof. Sana Shilstein, Dr. Paola Paoletti, Dr. Anne Löhnert,	C- DIP	2014
PI	Proposed Director	The Minerva Center for Traditional and Ancient Technologies and Industries Other in the research: Prof. Dr. Walther Sallaberger, Dr. Irit Ziffer, Dr. Etan Ayalon, Dr. Assaf Yasur Landau, Prof. Mahmud Yazbak, Yeshu Dray, Dr. Kamil Sari, Dr. Nimer Taha, Prof. Sana Shilstein, Dr. Paola Paoletti, Dr. Anne Löhnert,	C- MINERVA – Funded by the Federal German Ministry for Education and Research	2014
PI 1	Research Grant Prof. Sarel Shalev and Prof. Paternoster Giovanni- Proposed Directors	Ancient Silver Production and Economy Trade in the Mediterranean: A Comparative Analytical Study of Archaeological Finds from Israel and Italy	C- MOST- Israeli-Italian call for proposals on Scientific and Technological Cooperation	2014

10. Scholarships, Awards and Prizes

- 1994: The Wingate Scholarship for Research (\$16,500), Department of Materials and the Research Laboratory for Archaeology, University of Oxford, UK.
- 1995: Senior Visiting Fellow, Balliol College, University of Oxford, UK.

- 1996: Pilkington Research Fellowship in Biblical Studies (\$25,000), Christ Church, University of Oxford, UK.
- 2015:* Rector Award for Best Tutoring of an M.A. thesis at the Haifa Univeristy

11. Teaching

a. Courses Taught in Recent Years

<i>Years</i>	<i>Name of Course</i>	<i>Type of Course</i>	<i>Level</i>	<i>No. of Students</i>
1998	Materials in Archaeology	Lecture and Seminar	For post-graduates	<30
1998-1999	Methods of Production in the Ancient World: An Introduction to Ancient Technologies	Lecture and Pro-Seminar, for advanced BA students and Post-Graduates, Dept. of Maritime Civilizations., University of Haifa (Hebrew)	For advanced B.A. and Post-Grad	<30
1998-1999	150 Years of Archaeology: The History of Archaeological Research in the Ancient Near East	Lecture, Department of Archaeology, University of Haifa (Hebrew).	For advanced BA students & Post-Graduates	<30
1998-1999	Weapons in archaeology and in the bible	Lecture, Department of Archaeology, University of Haifa (Hebrew).	For advanced BA students	<30
1998-1999	Traditional and Ancient Crafts and Technologies.	Lecture, Department of Eretz Israel, University of Haifa (Hebrew).	for advanced BA students	<30
1999-2000	The archaeology of the Mediterranean cultures	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew).	For Post-Graduates	<30
1999-2000	The archaeology and history of the Sharon coast of Israel	Lecture and Pro-Seminar, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
1999-2002	The archaeology and history of the Late Bronze age in Israel and the Levant	Pro-Seminar, Department of Archaeology, University of Haifa (Hebrew)	For BA students and Post-Graduates	<30
1999-2003	The Mediterranean as an ancient cradle for metal production and trade.	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
2000	The archaeology and history of the Iron Age in Israel	Lecture, Department of Archaeology, University of Haifa	For BA students and Post-Graduates	<30
2000-2001	Archaeomaterials	Lecture and Seminar,	For Post-	<30

		Weizmann Institute of Science (English)	Graduates	
2000-2001	Introduction to the archaeology of the ancient Near East	Tutorial, Weizmann Institute of Science (English)	For Post-Graduates	<30
2000-2001	Introduction to the archaeology of the ancient Near East	Tutorial, Weizmann Institute of Science (English).	For Post-Graduates	<30
2000-2001	Introduction to the archaeology of the ancient Near East	Tutorial, Weizmann Institute of Science (English)	For Post-Graduates	<30
2000-2001	Introduction to the archaeology of the ancient Near East	Tutorial, Weizmann Institute of Science (English)	For Post-Graduates	<30
2000-2003	The Chalcolithic period in Israel	Lecture, Department of Archaeology, University of Haifa (Hebrew).	For BA students and Post-Graduates	<30
2000-2003	The archaeology of materials	Lecture, Department of Archaeology, University of Haifa (Hebrew)	BA students and Post-Graduates	<30
2003-2006	Organizing 4 lectures a month for Egyptian and foreign scholars,	The Israeli Academic Center in Cairo, on behalf of the Israeli Academy of Science and Humanities (English and Hebrew)		<i>Circa 40</i>
*2006-2008	Metal production and trade in the Mediterranean	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2007	The archaeology of materials in the Chalcolithic and EB	Seminar, Department of Archaeology, University of Haifa (Hebrew)	For MA students	<30
*2007	The archaeology of the Chalcolithic period in Israel	Seminar, Department of Archaeology, University of Haifa (Hebrew)	For MA students	<30
*2007-2008	Archaeometallurgy in the Mediterranean	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2008	The archaeology, history and heritage	Lecture, Department of Archaeology,	For B.A. and Post-	<30

	of the Judean Desert, Israel	University of Haifa (Hebrew)	Graduate students	
*2008	The archaeology and history of the Coastal Plain	Seminar, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2009	The development of ancient cultures in the Mediterranean	Seminar, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2009	Geographic History of Palestine	Lecture, Department of Archaeology, University of Haifa (Hebrew)	For BA and MA students	<30
*2009	The evidence for cultural connections between cultures in the Mediterranean basin during early periods	Seminar, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2009	The archaeology of the Chalcolithic and Early Bronze Age	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2010	Archaeometallurgy in the Mediterranean	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew)	For Post-Graduates	<30
*2010	Mediterranean trade during the Middle and Late Bronze Ages	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2012	Archaeology and History of the Bronze Age in the Land of Israel	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2012	The High-Tech of the ancient world	Technion (Hebrew)	For BSc and MSc students	More than 30
*2013	Introduction to the Maritime Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew).	For MA students	<30
*2013	Archaeometallurgy of the sea	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew).	For MA students	<30
*2013	Introduction to the	Lecture, Department of	For MA	<30

	Maritime Archaeology	Maritime Civilizations, University of Haifa.	students	
*2013	Scientific Applications in Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa	For MA students	<30
*2013	Ancient and Traditional Technologies	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2014	Canaan and Egypt – The Relationship Between Province and Empire	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For MA students	<30
*2014	Materials in Archaeology	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2014	Ancient and Traditional Technologies	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30
*2014	The History of Archaeometallurgy in the Mediterranean	Lecture, Department of Archaeology, University of Haifa (Hebrew)	For BA and MA students	<30
*2014	Introduction to Maritime Archaeometallurgy	Lecture, Department of Maritime Civilizations, University of Haifa	For MA students	<30
*2014	Scientific Applications in Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew).	For MA students	<30
*2014	Scientific Applications in Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa.	For MA students	<30
*2015	Scientific Applications in Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa (Hebrew).	For MA students	<30
*2015	Scientific Applications in Archaeology	Lecture, Department of Maritime Civilizations, University of Haifa.	For MA students	<30
*2015	Materials in Archaeology	Seminar, Department of Archaeology, University of Haifa (Hebrew).	For BA students	<30

b. Supervision of Graduate Students

<i>Name of Student</i>	<i>Name of other Mentors</i>	<i>Title of Thesis</i>	<i>Degree</i>	<i>Year of Completion / In progress</i>	<i>Students' Achievements</i>
M.A. Students					
M. Palatnik	Prof. S. Weiner, Weizmann Institute of Science	A metal production center from EB I on the coast of Ashkelon	M.A.	1999	unknown
K. Sari	Prof. M. Artzy, University of Haifa	The Phoenician metals in the coast of Israel during the Persian Period	M.A.	2001	Ph.D.
Z. Horowitz	Prof. M. Artzy, University of Haifa	West and East Connections during the IB Age	M.A.	2001	Ph.D. <i>in progress</i> Job with IAA
T. Kan-Cipor-Meron	Prof. M. Artzy, University of Haifa	The metal artifacts from the Middle Bronze Age cemetery of Rishon Lezion	M.A.	2001	Ph.D. <i>in progress</i>
D. Namdar	Prof. Y. Goren, Tel Aviv University	Chalcolithic Metals from Givat Oranim	M.A.	2001	Ph.D. Job at Hebrew University E19
N. Yahalom	Prof. A. Mazar, Hebrew University	Metals and metallurgy of Beth Shean	M.A.	2001	Ph.D. Post-doc <i>in progress</i> (Hebrew University)
H. Eliraz	Prof. M. Kochavi, Tel Aviv University	Local metal production in Tel Zeror during the Late Bronze Age	M.A.	2003	unknown
I. Stossel	Dr. U. Dahari, University of Haifa	Net fishing? Aggregation of perforated stoner from the Kinneret Lake	M.A.	2010	unknown
R. Abu-Ria	Dr. Y. Frenkel	The development of the Syrian sickle dagger (<i>Shibriyya Shamiyya</i>)	M.A.	*Since 2010 <i>in progress</i>	Job at IAA

Z. Eshel	Dr. N. Yahalom and Dr. A. Gilboa	Silver hoards in Israel	M.A.	*Since 2011 <i>finished</i> 2014/15	Rector Prize for Best M.A. thesis cum laude
G. Oren	Dr. Yael Gorin-Rosen	Metal in raw glass in antiquity: Production, use and trade in the Mediterranean sea basin	M.A.	*Since 2014 <i>in progress</i>	Hatter Award for M.A. proposal
<i>Ph.D. Students</i>					
N. Yahalom	Dr. U. Dahari, University of Haifa	Metals and metallurgy in Iron Age I Israel	Ph.D.	2010	Post-Doc <i>in progress</i> (Hebrew University) D25, E20, E23, E28
S. Kamil	Prof. S. Reich, Weizmann Institute	Phoenician metals and metallurgy in Persian period Israel	Ph.D.	2010	Job at IAA D47, E22, F6, F10
T. Kan-Cipor-Meron	Prof. M. Artzy, University of Haifa	Metal artifacts of the Middle Bronze Age in the southern Levant	Ph.D.	Since *2008 <i>in progress</i>	D44
<i>Post Doctorate Students</i>					
Dr. S. Bovet	Prof. P. de Miroschedji	In Archaeo-metallurgy, Sorbonne and CNRS, France	Post doc	Finished *2010	Job at CNRS

12. Miscellaneous

Exhibitions

1994-1995: Invited curator of a special permanent exhibition on archaeological science and experimental archaeology. Recasting the Past. Ashmolean Museum, Department of Antiquity, University of Oxford, UK.

Education Program

*2003-2004: Initiating and preparing with Prof. M. Evron a special B.A. program in Archaeological Sciences in the Department of Archaeology, University of Haifa.

Field Research & Field Experiments

1978-1980: (summer) Area Supervisor, Tel Michal Archaeological Excavations.

- 1979-1981: Director of Restoration and Conservation at Tel Michal Archaeological Excavations.
- 1981-1984: (summer) Area Supervisor and Instructor of Archaeological Field Methods for students of Tel Aviv University, at Tel Gerisa Archaeological Excavations.
- 1983: Curator and Assistant Field Director of the 9th season of excavations at Tel Qasileh, with Prof. A. Mazar.
- Since 1985: Research and Publication of metal finds from the excavations of:
1. The Hebrew University (Hazor, Beth-Shean, Batash, Qashish, Rehov, Gesher, Dor, Yokneam, Naharia, Tel Tzaf).
 2. Tel Aviv University (Aphek, Kabri, Gerisa, N. Qanah, Lachish, Dalit, Afridar, Zeror, Beer-Sheva, Jaffa, Aphek, Megiddo, Yavne-Yam).
 3. University of Haifa (Nami, Caesarea, Accho, Maagan Michael shipwreck, Dor shipwrecks, Nahal Amram mines [survey license under Shalev name]).
 4. Bar Ilan University (Shiloh, Tel Zafi).
 5. San Diego University, USA (Lahav, Shiqmim).
 6. Hebrew Union College (Dan, Shiqmim, Gilat).
 7. Centre de Recherche Francais de Jerusalem (Yarmuth, Far'a North).
 8. Ben Gurion University (Ashkelon Marina).
 9. Israel Antiquities Authority (N. Makuch, Erani, Fasuta, Palmahim, Yiftahel, K. Ata, N. Refaim, Ashkelon, Ein Hagit, R. Lezion, Hahotrim ship wreck, Givat Oranit, Modein, Barkai, Tel Kinerot, Yodefah, Shuni, Mihlah Kaplan).
 10. Weizmann Institute of Science (Ein Yahav smelting site [survey & excavation license under Shalev name], Timna).
- 1986-1992: Research Fellow, Metallurgical Lab, Institute of Archaeology, Tel Aviv University.
- 1992-1996: Senior Visiting Research Fellow, Department of Materials and the Research Laboratory for Archaeology, University of Oxford, UK.
- 1995-1996: Pilkington Senior Research Fellow in Biblical Studies, Christ Church College, University of Oxford, UK.
- 1996-2008: Senior-Scientist (special appointment), Center of Archaeological Sciences, Department of Environmental Sciences, Weizmann Institute of Science.
- 1998: Organizer of a casting experiment for reproducing Late Bronze Age ingots in the International workshop on Recycling, Hoarding and Trade in Bronze, the Israel Science Foundation and University of Haifa.
- 1998: Directing the excavation of metal installations in Ashkelon, within the

excavation of Y. Yekutieli, Ben Gurion University.

- 1999-2000: Conducting an ethno-archaeological research of traditional metal crafts in Cairo, Egypt and recording sand casting workshop. Under the auspices of the Israeli Academic Center in Cairo with the assistance of Cairo University.
- 2001: Invited by the Hungarian and Romanian Academies of Science to conduct a pilot research, with Dr. I. Ordentlich, on Transilvanian Bronze Age metallurgy.
- 2001: Invited to conduct, with the help of J. Hack (France) and S. Rovirah (Spain), a field experiment of reducing copper from Chalcolithic ore in a campfire Archeodrome, France.
- 2003: Invited to conduct, with the help of S. Shilstein (Physic Department Weizmann Inst.) and W. Kookelman (Physic Department Bonn Univ. Germany) a neutron diffraction experiment on ancient metals. ISIS, European Accelerator, U.K.
- 2003: Head of field excavation project near Ein Yahav with Y. Yekutieli (Ben Gurion University) of an ancient copper-smelting site.
- Since 2003: Conducting, with Prof. S. Shilstein, X-Ray Florescence Analyses of Sediments & materials during archaeological excavations. Field experiments in the sites of Caesarea, Tantara, Misliya (U. of Haifa); Beth Yerah, Tel Bareket (TAU); Tel Dor (Hebrew U.); Tel Yarmuth (Sorbonne, Paris); Ein-Yahav (Weizmann Institute); Ramleh (Israel Antiquities Authority).
- 2005-2007: Conducting, with Prof. S. Shilstein (Weizmann Institute) and Y. Yekutieli (Ben Gurion U.) Field and lab X-Ray Florescence Analyses of slag, ash, and sediment materials in the Timna ancient copper mines.
- *2008: Invited to conduct, with S. Shilstein (Physics Department, Weizmann Institute) and W. Kookelman (ISIS UK) a neutron diffraction experiment on Phase and element variations in Middle Bronze Age II copper-based axes. ISIS, European Accelerator, U.K.
- *2009: Conducting pilot research on Phoenician pottery XRF analyses in the Southern part of Spain (with A. Gilboa).
- *2009-2010: Conducting XRF flint analysis for the Hebrew University.
- *2009-2011: Conducting XRF soil contamination analysis in Arad, Jerusalem, Ramat Hasharon, Ashdod, Ramat Yishai, for the Ministry of Environment.
- *Since 2010: Conducting XRF ancient coins analysis (with Prof Shilstein) in the IAA collection, Israel Museum, Jerusalem.
- *2010-2012: Conducting XRF, SEM, XRD analyses of the Goa made, Indonesian

- sculpture and mask collection – with Dr. C. Giardino (Italy) and Prof. S. Rovira (Spain).
- *2011: Conducting XRF analysis of 16th-17th centuries lab brass equipment in the Art e Métier Museum, Paris.
 - *2011: Conducting XRF analysis of MB – LB metals from Syria in the Louvre, Paris.
 - *2011: Conducting XRF analysis of prehistoric bones and ivories (with Dr. E. David), Musee Archeologie National, St. Germain en Ley, France.
 - *2011-2014: Conducting XRF analysis of 3rd-2nd Millennium pottery from Pakistan, Baluchistan, Indus valley in Musee Guimme, Paris & Tajikistan. As part of the ROXINA French-German project.
 - 2012: XRF analyses of prehistoric flint tools and sources with the Inst. of Arch., Hebrew University.
 - *2012: Conducting XRF analysis of Byzantine pottery from Nabatian sites (with P. Weimann).
 - *Since 2012: Conducting XRF analysis of corals (with S. Shilstein) for Department of Marine Biology, University of Haifa (D. Chernov and Y. Popovitch).
 - *Since 2012: Metal bells in Myanmar (by the request of the Minister of Culture, with the field school for archaeology in Myanmar)
 - *Since 2012: Assisting with the Geochemistry research of projects and students of the Department of Marine Biology and the Dept. of Marine Geology in the School of Marine Sciences, U. of Haifa.
 - *2012-2013: Analyses of sediments and metal finds in Beth Saideh, with R. Arav, Nabaska, U.S.A.
 - *2013: Bone, shell, minerals, copper, pottery and paints in Prehistoric Dikili Tash site, northern Greece, with the CNRS mission, France.
 - *Since 2013: XRF, XRD and SG analyses of ancient glass from excavations at Akko, Montfort, Caesarea, Beit Eliezer.
 - *Since 2013 XRF analyses of obsidian tools and core from Kabri and Tel Tzaf – in Sites and Israel Museum, Jerusalem.
 - *Since 2014: Analysis and archaeometallurgy of metals from Tel Tsaf, Fazael, Kabri, En Gedi, Haofel-Jerusalem, Tel Yarmouth, Susita, Neshar-Ramleh, Khirbet Qeiyafa.
 - *Since 2015: Conducting XRF Analysis of Etruscan Chariot in Padova University and EB metals in Lecce Museum, Italy.

PUBLICATIONS

A. Ph.D. Dissertation

Title: Ancient Metallurgy in Israel and its Contribution to the Study of Social Structure

Date of submission: Submitted, July 1992 and accepted with no changes, 1993.

Number of Pages: 255

Language: Hebrew

Name of Supervisor: Prof. Z. Herzog and Prof. E. Grunbaum

University: Tel Aviv University

Publications: (D4, D7, D8, D9, D10, D11, D28, D38, E1, E4, E6, E9, E10, E11, E27, H4)

B. Scientific Books (Refereed)

Authored Books – Published

1. **Shalev S.** (2004) (ordered by the publisher), *Swords and Daggers in Late Bronze Age Canaan*. Praehistorische Bronzefunde (P.B.F. Vol. IV, 13), Akademie der Wissenschaften und der Literatur, Mainz. 130 pp (including 27 plates).

C. Monographs

Not App.

D. Articles in Refereed Journals

My responsibilities in all publications of more than one author are the archaeometallurgy and archaeomaterials analyses and synthesis. In most cases when there is more than one author, the first name contributed more than the others. In all cases the name that appears last, is the head of the project and/or the research group.

Published

1. **Shalev, S.** (1980). Area A5: The Eastern Slope of the High Tel. In: Excavations at Tel Michal 1978-1979. *Tel Aviv* 7, 19-21. Scimago Journal Rank Indicator (2014): 0.764. (V).
2. **Shalev, S.** (1988). Redating the “Philistine Sword” at the British Museum: A Case Study in Typology and Technology. *Oxford Journal of Archaeology* 7(3), 303-311. Scimago Journal Rank Indicator (2014): 0.418. (V).
3. Levy, T.E., & **Shalev, S.** (1989). Prehistoric Metalworking in the Southern Levant: Archaeometallurgical and Social Perspectives. *World Archaeology* 20(3),

- 352-372. Scimago Journal Rank Indicator (2014): 0.520. Web of Science Cited References: 112. (V).
4. **Shalev, S.**, & Northover J.P. (1989). A Cast Bronze Door Hinge from Tel Lachish: An Archaeometallurgical Study. *Tel Aviv* 15-16 (2), 197-205. Scimago Journal Rank Indicator (2014): 0.764. (V).
 5. Gopher, A., Tsuk, T., **Shalev S.**, & Gophna, R. (1990). Earliest Gold Artifacts in the Levant. *Current Anthropology* 31(4), 436-443. Scimago Journal Rank Indicator (2014): 1.862. Web of Science Cited References: 24.(V).
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43. *Eisenberg M., Iermolin A., **Shalev, S.** (*accepted, after corrections*) The Transition from the Byzantine Period to the Umayyad as Reflected on a Weight from Antiochia Hippos (Sussita), *BASOR*.
44. *Shilstein, S., Avner U., #Kan-Cipor – Miron T. **Shalev S.** (*accepted, after corrections*). Comparative Study of Slags from two different Copper Smelting sites in the Southern 'Araba Valley, Israel, to be published in a special issue of an archaeological Spanish Journal.

45. *Kan-Cipor – Miron T., Shilstein, S., Levi Y., **Shalev S.** (*submitted, under review*). Middle Bronze Age II Daggers from Rishon LeZion, Israel: The Production Methods and the Copper Alloys used in their manufacturing process. *JAS Reports*.
46. ***Shalev, S.**, Shilstein, S. (*forthcoming*). Metals from Ancient Cemeteries in the “Qiryah” quarter. *Atiqot*. [Final version submitted for publication].
47. ***Shalev, S.** (*forthcoming*) Metallurgical Analyses. In S. Wachsmann (ed.), Hahotrim shipwreck. *Atiqot*. (circa 7pp. before refereeing). [Final version submitted for publication]

E. Articles or Chapters in Scientific Books (Refereed)

My responsibilities in all publications of more than one author are the archaeometallurgy and archaeomaterials analyses and synthesis. In most cases when there is more than one author, the first name contributed more than the others. In all cases the name that appears last, is the head of the project and/or the research group.

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5. **Shalev, S.** (1993). Metal Production and Society at Tel Dan. In *Biblical Archaeology Today (1990)* (pp. 57–65), Proceedings of the Second International Congress on Biblical Archaeology. Jerusalem: Israel Exploration Society.
6. **Shalev, S.** (1993). The Earliest Gold Artifacts in the Southern Levant: Reconstruction of the Manufacturing Process. In C. Eluere (ed.), *Outils et ateliers d'orfèvres des temps anciens* (pp. 9-12). Antiquites Nationales Memoire 2. Saint Germain-en-Laye.
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16. **Shalev, S., and Freund, M.** (2002). The archaeology of Islamic metals and the anthropology of traditional metal casting in Cairo today. In B. Otaway (ed.) *Ancient metals and society* (pp. 83-97). Oxford.

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31. *#Yahalom, N., & **Shalev, S.** (2009). Metal objects. In Y. Gadot & E. Yadin (eds.), *Aphek-Antipatris II, the Remains on the Acropolis: The Moshe Kochavi*

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36. *Shilstein, S., & Shalev, S. (2015). Comparison of compositional variations in modern European bronze coins with variations in some ancient coins. *Archaeometallurgy in Europe III. Deutsches Bergbau-Museum Bochum Publications. June 29– July 1, 2011* (pp. 363–367).
37. *Shalev S., (2015). A Chemical Analysis of the Ophel Treasure. (chapter 5). In: Mazar E. (ed.) *The Ophel Excavations to the South of the Temple Mount 2009-2013, Final Report Vol. I, Part II: The treasure*. Pp. 447-455.
38. *Shalev, S., and Shilstein S. (2016). XRF Analysis of Silver Coins and Various Silver Objects (chapter 8). In: Farhi Y. (ed.) *Khirbet Keyafa Vol. V. The Numismatic Finds*. The Hebrew University Publications, Jerusalem. Pp. 167-174

Accepted for Publication (after reviewing and editing)

39. *Avner, U., Ginat, H., Shalev, S., Shilstein, S., Langford, B., Frumkin, A., Shem-Tov, R., Pilin, S., Arav, R., & Basson, U. (forthcoming). Ancient copper mines at Nahal Amram, Southern Arabia: A new research. In E. Ben-Yosef & Y. Goren (eds.), *Mining for copper: Essays in memory of professor Beno Rothenberg* (pp. 99–112). Tel Aviv University.
[Submitted & accepted, after reviewing]
40. *Shalev, S., & Shilstein, S. (forthcoming). Compositional analysis of Slags from Nahal Amram. In E. Ben-Yosef & Y. Goren (eds.), *Mining for copper: Essays in memory of professor Beno Rothenberg* (p. 36).
[Submitted & accepted, after reviewing]

41. *Shalev, S., (*forthcoming*). Analyses of the Metals (part 3) in: de Miroschedji P. (ed), *Yarmuth Hoard*. Paris. [Submitted & accepted, after reviewing]
42. *Raphael, K., Shilstein, S., & Shalev, S. (*forthcoming*). The Metal finds from Wadi Siah. In *Wadi Siah final Archaeological report*. [After reviewing waiting for IAA publication]
43. *Yahalom-Mack, N., Shilstein, S., & Shalev, S. (*forthcoming*). The Metal Objects from Har Ebal. In A. Zertal (ed.), *Excavations in Har Ebal*. University of Haifa. [After reviewing]
44. *Kamil, S., Bamberger, M., & Shalev, S. (*forthcoming*). Metal finds from Nahariyya excavations. In *IAA final report*. [Final version submitted for publication]
45. *Shalev, S., Shilstein, S., & Sari, K. (*forthcoming*). Persian Period Metal Finds (pp. 640-625). Jacob Kaplan excavations at Jaffa. [After reviewing waiting for IAA publication]
46. *Shalev, S., & Sari, K. (*forthcoming*). Metal production in Tel Megadim. In S. Wolf Tel Megadim: the findings of the 1994 excavations. *'Atiqot*. [After reviewing waiting for IAA publication]
47. *Shalev, S., (*forthcoming*). The Metallurgy of the Synagogue Cash and Finds from Ein Gedi. In: Porath Y. (ed.). *The excavations of Ein-Gedi Synagogue final report*, IAA Publications. [Submitted]

F. Articles in Conference Proceedings

**All Presentations and Posters detailed above in section 6 are published accordingly in the conferences proceedings under the title of the presentation or poster.*

G. Entries in Encyclopedias

1. *Shalev, S. (2008). (ordered by the publisher) Bronze Age Metal Production and Utilization. In *World Encyclopedia of Archaeology* (pp. 898–899). Elsevier.

H. Other Scientific Publications

Published

1. Shalev, S. (1993). Archaeometallurgy - Archaeology of Ancient Technology. *Archaeology and the Natural Sciences, Bulletin No 1*, 8–10). Rehovot: The Weizmann Institute of Science. (Hebrew)
2. Shalev, S. (1998). A Fatimid Hoard from Caesarea. *Archaeology and the Natural Sciences, Bulletin No 6*, 31–36. Rehovot: The Weizmann Institute of Science. (Hebrew)

3. ***Shalev, S.** (2007). Archaeomaterials in the Marine Environment. *R.I.M.S. News* 33: 3–6.
4. *Avner, U., Ginat, H., **Shalev, S.**, Shem-Tov, R., & Langford, B. (2013). The Biq'a Secret. *Beshvil Haaretz* 52, 32–34. (Hebrew)

I. Other Works and Publications

Notes in Scientific Journals

1. Shalev, S. (1994). Metallurgical Analysis of Bronze Jewelry from Tomb No. 28 in Palmahim. *'Atiqot* 25: 7*. (Hebrew)

Notes in Scientific Bulletins

2. ***Shalev, S.**, Happ, J., & Frere-Sautot, M.-C. (2003). How could the Chalcolithic people from southern Israel produced their copper tools, more than six thousand years ago? *Cu + Bulletin du Groupe de Travail International sur la paleometallurgie des cuivres et des mineraux associes* 3:5.

News in Scientific Journals

3. **Shalev, S.** (1993). Archaeometallurgy - Archaeology of Ancient Technology Extracted from paper published in the Bulletin of Archaeology and the Natural Sciences 1 (1993). *Qadmoniot* 26(103-104), Bulletin, 134–135. (Hebrew). (V).
4. ***Shalev, S.** Shilstein, S. and Kockelmann W. (2004). Neutron diffraction of Levantine archaeological findings, *ISIS Experimental Report* RB14475

Newsletter

5. **Shalev, S.**, & Northover, J. P. (1991). The Chalcolithic Metal Industry at Shiqmim and the Nahal Mishmar Hoard. *Institute for Archaeo-Metallurgical Studies News Letter* 17: 1.

K. Summary of my Activities and Future Plans

Throughout my academic career, my major goal has been to continue to contribute and assist in establishing as much as I can to the interdisciplinary study of the archaeology of metals and metallurgy in ancient Israel and the Levant. The major milestones, which I have tried to contribute and further develop, have been and are:

- Helping in establishing archaeometallurgy research as a “legitimate” part of present and future mainstream archaeology in Israel. To that end, great effort was and still is devoted to making all studies valid and reliable, first and foremost, for the accumulated archaeological data for reconstructing ancient complex technologies. Progress toward this goal may be partially evaluated by the amount of archaeometallurgical publications as chapters (and not appendixes) in archaeological

reports and as the subject of dedicated books and major archaeological journals (and not only in archaeometric journals). Another way to evaluate the advancement in this direction is to view the careers of students: one of my PhD students (Kamil Sari) now has a high official management and research position in the IAA; another PhD student (Naama Yahalom) will shortly begin a tenure-track position at a senior level in the Department of Archaeology in the Hebrew University in Jerusalem; and a Post-Doc in this field (Sylvain Bauvais) received a life research Position in archaeometallurgy at the CNRS, France. But still, there is a lot of work ahead in this regard.

- Establishing an active archaeomaterials research laboratory, first in the Center for Archaeological Sciences in the Weizmann Institute of Science and, later, in the School of Marine Sciences in the University of Haifa., for the study and teaching of the analysis of chemical composition and metallography of ancient metals and metallurgical remains from sites and excavations mainly in Israel. Today, these labs, now in the Physics Department at Weizmann and in Haifa are working on several different research topics, including for example: Middle Bronze age archaeometallurgy; the Nahal Amram ancient copper production; gold and silver coins and objects and new Chalcolithic finds from the site of Fazael.
- The conducting of research projects abroad. These including the study of pottery composition as an indicator of long distance cultural connections and ethnic movements in Central Asia (in Tajikistan, Uzbekistan, Pakistan region), and the metal composition and mode of production of bells in the Pagodas of Myanmar with the help of the Myanmar Ministry of Culture.
- In recent years, as part of a future program, I have been working on broadening my research field by analyzing archaeological sediments on-site during excavation, analyzing differences in pottery composition, and studying flint tools and obsidian.
- Finally, in order to better understand the possible production processes in different materials in archaeology and as part of our obligation to society, we are currently establishing in the lab, a center for studying and documenting traditional pre-industrial crafts in the Arab and Jewish traditional societies in Israel. These include sending students to the community to teach and tutor the fieldwork of high school children. One of the current projects in progress is being conducted in the Druze village of Daliyat el-Carmel with the direct help and participation of the school staff and the village society.