

Professor of Mathematics
Urbanist and Architectural Theorist

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Education and Training

Ph. D. Physics 1978, State University of New York at Stony Brook
M. A. Physics 1974, State University of New York at Stony Brook
B. Sc. Physics Cum Laude 1971, University of Miami, Coral Gables
Collaborated with Christopher Alexander over a twenty-year period editing
Alexander's four-volume book "The Nature of Order"

Languages

English, French, Greek, Italian, and Spanish.

Positions in Academia

University of Texas at San Antonio: Assistant Professor of Mathematics 1983-1987;
Associate Professor (tenured) 1987-1995; Professor 1995-present
University of Texas at San Antonio: Visiting Lecturer in the College of Architecture
2012
Building Beauty Postgraduate Program in Architecture, faculty member, 2018-present
University of Delft, Holland, Adjunct Professor of Urbanism, 2005-2008
University of Rome III, Italy, Visiting Professor of Architecture
Tecnológico de Monterrey, Santiago de Querétaro, Mexico, Visiting Professor of
Urbanism.

Architectural and Urban Projects

Commercial Center in Doha, Qatar: a \$82 million budget, 55,000 m² project commissioned in a Classical Greco-Roman/Rinascimento style, 2007, by Hadi Simaan & Partners, José Cornelio da Silva, and Nikos A. Salingaros (not built). Included in the 500th Centennial Exhibition “The New Palladians”, inaugurated and organized by the Prince’s Foundation, London, supported by the ICAA, INTBAU, and RIBA, and published as a book.

Urban Plazas Project for the City Government of Querétaro, Mexico, 2008. Collaboration with Ramón Abonce-Meza, Carlos Arvizu-García, and Stefania Biondi, on the faculty of the Tecnológico de Monterrey, Campus Querétaro.

Advisor to the Social Housing Research Group (Grupo de Estudos da Habitação de Interesse Social), Federal University of Santa Catarina, Brazil, which is working with the Brazilian federal government. Collaboration with faculty members Carolina Palermo-Szucs, Roberto Deoliveira, and Alina Santiago. Worldwide involvement with self-construction of social housing in an open-source environment with the Peer-to-Peer Foundation.

Collaborating with the Gruppo Salìngaros in Italy (Ettore M. Mazzola, Gabriele Tagliaventi, Pietro Pagliardini, Stefano Serafini, Paolo Masciocchi, Antonio Caperna, Ciro Lomonte, Wittfrida Mitterer, Alessandro Pierattini, Stefano Silvestri, Alessia Cerqua, Milena De Matteis & Pietro Pini), Portugal (Jose Cornelio-da-Silva) and Britain (Sergio Porta) in an advisory role for new urban development in Italy and Kosovo.

Current Research

I am investigating the mathematical basis for architecture, design, and urban structure. This work applies tools such as fractals, geometrical symmetries, and vector spaces. Understanding the evolution of urban form draws upon complexity theory. Applying evidence-based principles to shape the built environment radically changes the practice and teaching of architecture and design. Students internationally request me to be an external member of their thesis committee.

During 1979–1997 I made contributions to Clifford Algebras, finite groups, mathematical physics, the Campbell-Baker-Hausdorff formula, relativistic field theory, quantum electrodynamics, the motion of charged particles, force-free magnetic field configurations, plasma physics, the design of superconducting magnets, magnetohydrodynamic generators, and thermonuclear fusion (summary [HERE](#)). Those earlier publications are listed below in the Appendix.

Grants

Alfred P. Sloan Foundation Grant to study the Scientific Laws of Architecture, 1997-2000; extended to 2001

Onassis Foundation Senior Visiting Scholar, University Seminars Program, February 2013

International Initiatives Grant EVP/SIO, University of Texas at San Antonio, 2013 — awarded but never used.

Consulting

Urban Land Institute, 1025 Thomas Jefferson Street, N.W., Suite 500 West, Washington, D.C. 20007.

International Consultant to CNU México — Consorcio para el Nuevo Urbanismo, 2012.

Scientific Committee of the Institute for Advanced Architecture of Catalonia (IAAC), Barcelona, Spain, 2012.

Honors and Awards

Winner of the 2019 *Stockholm Cultural Award for Architecture*, Stockholm, Sweden.

Shared the 2018 *Clem Labine Traditional Building Award* with Michael Mehaffy

Onassis Foundation Senior Visiting Scholar, University Seminars Program, February 2013

The 2012 Slater-Maguire Lecture, Saint Margaret's Church, Winnipeg, Canada.

Commencement Address, Center for Byzantine & Modern Greek Studies, Queen's College, City University of New York, 2011

Keynote lecture at the CRESC Annual Conference, Manchester, 2011.

Chosen as one of ten worldwide "Experts on Traditional Architecture" by *Fides et Forma*, 2011.

Keynote speaker, The Athens Dialogues, The Onassis Foundation, Athens, 2010

Ranked 11th in Planetizen's poll The Top 100 Urban Thinkers, September 2009.

Keynote speaker, Complexity Theory of Cities Comes of Age Conference, Technical University of Delft, Holland, September 2009.

Finalist for the 2009 Arthur Ross Award.

Distinguished Visitor, Ben-Gurion University, Israel, November 2008.

One of the 50 Visionaries who are changing your world selected by the *UTNE Reader*, 2008.

Keynote panelist, Forum for Urban Design, New York City, 13 May 2008.

Keynote Speaker, Brazilian and Ibero-American Conference on Social Housing, Florianopolis, Brazil, 2006.

Committee of Honor, International Network for Traditional Building, Architecture and Urbanism (INTBAU).

Elected to the International College of Traditional Practitioners, the Prince's Foundation, London, in 2004.

Keynote Speaker, 5th Biennial of the European Congress of Town Planners, Barcelona, Spain, 2003.

Board of Advisors, Institute for Studies in Sacred Architecture (ISSA)

Senior Member of the Institute of Electrical and Electronics Engineers

Listed in Who's Who in Science and Engineering

Listed in Who's Who in Frontiers of Science and Technology

Listed in American Men and Women of Science

Doctoral and Masters Students in Architecture and Urbanism.

2005 Antonio Caperna, PhD in Urbanism. [*Information Communication Technology per un progetto urbano sostenibile*](#), University of Rome III, Rome, Italy (Committee Member). Now Professor at the ISB School of Biourbanism and Design, Italy, and Fellow at the Built Environment Research Group, University of Derby, UK.

2005 Ina Klaasen, PhD in Architecture. [*Knowledge-based Design: Developing Urban & Regional Design into a Science*](#), Delft University of Technology, Delft, Holland (Committee Member). Deceased.

2005 David Miet, DiplEng in Architecture, University of Lyon, France (External Advisor). Co-founder and CEO of Villes Vivantes, Bordeaux, France.

2006 Ernesto Philibert-Petit, PhD in Urbanism. [*Connectivity oriented urban projects*](#), Delft University of Technology, Delft, Holland (Committee Member). Director General of the Consorcio para el Nuevo Urbanismo, Estado de Querétaro, Mexico.

2007 Jannick Joye, PhD in Philosophy. [*A tentative argument for the inclusion of nature-based forms in architecture*](#), University of Ghent, Belgium (Committee Member). Faculty at ISM University of Management and Economics, Vilnius, Lithuania.

2007 Claudia Yamu-Czerkauer, PhD in Urbanism. [*Organizing the City: Morphology and Dynamics. Phenomenology of a Spatial Hierarchy*](#), Vienna University of Technology, Vienna, Austria (Committee Member). Associate Professor, University of Groningen, Holland.

2007 Damien Mikolajczyk, DiplEng in Architecture, University of Nancy, France (Committee Member). Senior Partner at Formidable Architectes, Lyon, France.

2007 Nuria Hernández Amador, MSc in Urbanism, Tecnológico de Monterrey, Campus Querétaro, Mexico (External Advisor). Architect/urbanist practicing in Querétaro, Mexico.

2007 Alessia Marcolongo, MSc in Architecture, Technical University of Turin, Italy (External Advisor). Senior Partner at Marcolongo&Fasan Architetti, Biella, Italy.

2007 Stefania Parei, MSc in Architecture, Technical University of Turin, Italy (External Advisor). Architect practicing in Garlasco, Italy.

2007 Laura Vuillermoz, MSc in Architecture, Technical University of Turin, Italy (External Advisor). Architect practicing in Hone, Italy.

2008 Arthur van Bilsen, PhD in Urbanism. [*Mathematical Explorations in Urban and Regional Design*](#), Delft University of Technology, Delft, Holland (Committee Member). Now with Argo Artificial Intelligence, Princeton, New Jersey.

2009 Aviva Peeters, PhD in Architecture. [*A Quantitative Systematic Approach for Evaluating the Relation between Climate and Urban Form*](#), Ben-Gurion University, Sede-Boqer, Israel (Committee Member). Chief Executive Officer, Co-Founder & Research Scientist at TerraVision Lab, Midreshet Ben-Gurion, Israel.

2009 Pietro Pini, MSc in Architecture, University of Florence, Italy (External Advisor). Architect practicing in Florence, Italy.

2011 Emanuele Strano, MSc in Urban Design, University of Strathclyde, Glasgow, United Kingdom (Committee Member). Post-Doctoral researcher at MIT, Cambridge, Massachusetts.

2014 Tomasz Estkowski, PhD in Architecture. [*Towards a Generative Design System Based on Evolutionary Computing*](#), Oslo School of Architecture, Norway (Committee Member). Now with Meinich Arkitekter, Oslo, Norway.

2014 Kinda Al Sayed, PhD in Architecture. [*Urban Morphogenesis. How form-function complexity coupled temporal changes on street configurations in Manhattan and Barcelona over the past centuries*](#), Bartlett School, University of London, United Kingdom (Committee Member). Researcher at the University of Sussex, UK.

2014 Fouad Khan, PhD in Architecture. [*Scaling in Cities as an Indicator of Energy Consumption: What Fractal Analysis Could Tell Us About Resilience and Disparity in Complex Systems*](#), Central European University, Budapest, Hungary (Committee Member). Senior Editor of Nature-Energy, Springer-Verlag, New York.

2015 Ngoc Hong Nguyen, PhD in the School of Geographical Sciences and Urban Planning. [*Understanding the Generative Process in Traditional Urbanism: An Application Using Pattern and Form Languages*](#), Arizona State University, Tempe, Arizona (External Advisor). Senior Lecturer at Danang University, Da Nang, Vietnam.

2017 Jon Arteta-Grisaleña, PhD in Architecture. [*El Paradigma de la Complejidad en el Diseño Arquitectónico y Urbano. Fundamentos, Teoría, Proyecciones*](#), University of Alcalá de Henares, Madrid, Spain (External Advisor). Architect practicing in Santiago, Chile.

2018 Zaheer Allam, PhD in Urbanism. [*Redefining the Smart City: Culture, Metabolism and Governance. Case Study of Port Louis, Mauritius*](#), Curtin University,

Perth, Australia (Committee Member). Now with Visio Architecture, Port Louis, Mauritius.

2018 Bartolomeo Maiorana, PhD in Urbanism. [*An information systems ontology for the urban development domain*](#), Faculty of the Built Environment, University of New South Wales, Sydney, Australia (External Examiner). Architect and Urban Planner in Sydney, Australia.

2018 Laura Bustillos, Master's in Architecture, University of Texas at San Antonio (Co-supervisor). Architect practicing in San Antonio, Texas.

2019 Tokunbo Laotan Brown, PhD at the Graduate School, Economics and Techniques for the Conservation of the Architectural and Environmental Heritage. [*Has evolution been interrupted in the African oikos? Merging the self-organization activity approach using African fractal spatial patterns with tangible and intangible values. Yoruba cities as a case study*](#), University of Nova Gorica, Slovenia (Committee Member). Formerly Director at Tea Group Building Projects Ltd, London, UK. Now architect/urbanist practicing in Galway, Ireland.

2020 Mohammed Zaheer Allam, Master's in Political Economy, Faculty of Arts and Social Sciences, Department of Political Economy, The University of Sydney, Australia (External Examiner). Now with Visio Architecture, Port Louis, Mauritius.

Student dissertations directly based on my research

Hassan Al Qubesi, M.Sc. Architecture, Jordanian University of Science and Technology, 2000

Uta Wolf, M.Sc. Architecture, University of Westminster, 2002

Emmanuel Riglis, Ph.D. Mathematical and Computer Sciences, Heriot-Watt University, Edinburgh, 2003

Sanjeev Sinha, Ph.D. Mechanical Engineering, University of Strathclyde, 2004

Remon M. Rooij, Ph.D. Urbanism, Delft University of Technology, 2005

Professional Service

Editor-in-Chief, New Design Ideas, 2019-present.

Special Issue Editor for specialized topics in design, MDPI Journals

Editorial Board, Environment & Planning B.

Editorial Board, Cuadernos de Arquitectura y Nuevo Urbanismo (Tecnologico de Monterrey)

Editorial Board of Journal of Architectural and Planning Research.

Editorial Board of Resource for Urban Design Information, Oxford Brookes University, England.

Associate Editor of Nexus Network Journal, 2001-2005.

Associate Editor of Online Planning Journal

Associate Editor of Physics Essays, 1995-2000

Member, Steering Committee of the International Symposium on Current Trends in Fusion Research, 1993-2000

Associate Editor of the Hadronic Journal, 1983-1985

Grant Reviewer for the US National Science Foundation, the Israel Science Foundation, and the Austrian Science Foundation (FWF)

Books published in various languages.

1. Anti-Architecture And Deconstruction (Umbau-Verlag, Solingen, Germany, 2004; 209 pages) 4th Edition (Sustasis Press, Portland, Oregon). French Edition: Anti-Architecture Et Deconstruction (Umbau-Verlag, Solingen, Germany, 2005; 212 pages). Italian Edition: Antiarchitettura e Demolizione (Libreria Editrice Fiorentina, Florence, Italy, 2007; 228 Pages). Chinese Edition, China Architecture And Building Press, 2010. Persian, Russian, and Spanish Editions.
2. Principles Of Urban Structure (Techne Press, Amsterdam, Holland, 2005; 252 pages). Chinese Edition, China Architecture and Building Press, 2011.
3. A Theory Of Architecture (Umbau-Verlag, Solingen, Germany, 2006; 278 pages). Persian Edition, Ministry Of Housing And Urban Development, Center For Architectural and Urban Studies and Research, 2008. Chinese Edition, China Architecture and Building Press, 2010.
4. No Alle Archistar: Il Manifesto Contro Le Avanguardie, In Italian, Libreria Editrice Fiorentina, 2009 (In Italian only).
5. Algorithmic Sustainable Design: Twelve Lectures on Architecture, Umbau-Verlag, Solingen, 2010 (254 pages). Chinese Edition, China Architecture and Building Press, 2013. Persian and Russian Editions.
6. P2P Urbanism, Online Book Available For Free Download, 2010. Includes Chapter “Favelas And Social Housing: The Urbanism of Self-Organization” (with David Brain, Andrés M. Duany, Michael W. Mehaffy & Ernesto Philibert-Petit). Portuguese Edition: “Habitação Social Na América Latina: Uma Metodologia Para Utilizar Processos de Auto-Organização” is published online by ArchDaily Brasil. Spanish Edition: “Vivenda Social en Latino-América” is published online by Plataforma Arquitectura.
7. Unified Architectural Theory: Form, Language, Complexity, Sustasis Press, Portland, Oregon, 2013 (300 pages). Arabic, Czech, German, Nepali, Spanish, and Urdu Editions.
8. Design For A Living Planet (with Michael Mehaffy), Sustasis Press, Portland, Oregon, 2015 (236 pages).
9. [Design Patterns and Living Architecture](#) (booklet), *Sustasis Press*, Portland, Oregon (2017: 72 pages), available as an ebook only. Lithuanian Edition.

10. A New Pattern Language for Growing Regions (with Michael Mehaffy, Yulia Kryazheva, Andrew Rudd, Ana Gren, Leslie Mehaffy, Steve Mouzon, Laura Petrella, Sergio Porta, Laurence Qamar, and Yodan Rofè), Sustasis Press, Portland, Oregon, 2020 (363 pages).

Publications: Articles

55. “In Defence of Alexander”, *HALI: The International Magazine of Antique Carpet and Textile Art* **78** (1995), 67-69.

56a. “The Laws of Architecture from a Physicist’s Perspective”, *Physics Essays* **8** (1995), 638-643.

56b. Spanish translation of 56a: “Las Leyes de la Arquitectura desde la Perspectiva de un Físico”, *El hombre y la Máquina*, No 16, April 2001, pages 12-23. Republished in *La Simetria*, February 2002.

57. “Life and Complexity in Architecture From a Thermodynamic Analogy”, *Physics Essays* **10** (1997), 165-173. Reprinted in Uta Wolf, *Chasing Butterflies: The Patterns of Chaos Theory and the Built Environment*, University of Westminster, 2002; pp. 63-74. Subject of Appendix 6 of Christopher Alexander’s book *The Phenomenon of Life: The Nature of Order, Volume 1*, 2003.

58a. “Theory of the Urban Web”, *Journal of Urban Design* **3** (1998) 53-71. Earlier version entitled “Mathematical Theory of the Urban Web”, published by *RUDI — Resource for Urban Design Information*, Oxford, England (July 1997), approximately 12 pages.

58b. Finnish translation: “Kaupunki Verkostona”, *Tampere University of Technology, Institute of Urban Planning publication No. 33*(2000).

58c. Spanish translation: “Teoría de la Red Urbana” published online by *Arqchile.cl*, 2008.

58d. Portuguese translation published on the Web.

58e. Greek translation published by *Greekarchitects*, 13 September 2009)

59. “A Scientific Basis for Creating Architectural Forms”, *Journal of Architectural and Planning Research* **15** (1998), 283-293.

60. “Urban Space and its Information Field”, *Journal of Urban Design* **4** (1999), 29-49.

61. “Architecture, Patterns, and Mathematics”, *Nexus Network Journal* **1** (1999), 75-85.

62. (N. A. Salingaros and B. J. West) “A Universal Rule for the Distribution of Sizes”, *Environment and Planning B* **26** (1999), 909-923.

63. “The Life of a Carpet: An Application of the Alexander Rules”, *Oriental Carpet and Textile Studies V*, edited by M. Eiland, Jr. and R. Pinner (International Conference on Oriental Carpets, Danville, California, 1999), pages 189-196.

64. (T. M. Mikiten, N. A. Salingaros and H-S. Yu) “Pavements as Embodiments of Meaning for a Fractal Mind”, *Nexus Network Journal* **2** (2000), 63-74.
65. (A. Klinger and N. A. Salingaros) “A Pattern Measure”, *Environment and Planning B* **27** (2000), 537-547.
66. “The Structure of Pattern Languages”, *Architectural Research Quarterly* **4** (2000), 149-161.
- 67a. “Hierarchical Cooperation in Architecture, and the Mathematical Necessity for Ornament”, *Journal of Architectural and Planning Research* **17** (2000), 221-235.
- 67b. French translation: “La Nécessité Mathématique de l’Ornement”, *Revue BénéFique (Lyon)* **2** (2002), 151-174.
- 68a. “Complexity and Urban Coherence”, *Journal of Urban Design* **5** (2000), 291-316.
- 68b. Italian translation: “Complessità e Coerenza Urbana”, *Strumenti per la Pianificazione e Progettazione Sostenibile* (University of Rome) (2000).
- 69a. (Victor Padrón and Nikos Salingaros) “Ecology and the Fractal Mind in the New Architecture: A Conversation”, *RUDI — Resource for Urban Design Information* (2000), approximately 12 pages.
- 69b. Farsi translation, *KHANEH Quarterly* **4 & 5** (Winter & Spring 2003).
- 69c. “Fractals in the New Architecture”, portions of 69a published as an article with figures, *Archimagazine* (2001), approximately 6 pages. Republished in *Katarxis No. 3* (September 2004).
- 69d. Italian translation: “I Frattali Nella Nuova Architettura”, *Archimagazine* (2001), approximately 6 pages.
- * Interview (in French) with *Archicool — Paris* (January 2001), approximately 4 pages.
70. (N. A. Salingaros and D. M. Tejada) “Modularity and the Number of Design Choices”, *Nexus Network Journal* **3, No. 1** (2001), pages 99-106.
- * Book Review of Anthony Vidler’s “*Warped Space. Art, Architecture, and Anxiety in Modern Culture*”, *Journal of Urban Design* **6**(2001), pages 332-334. Reprinted as Part 5 of “Anti-Architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.
- 71a. “Remarks on a City’s Composition”, earlier version published by *RUDI — Resource for Urban Design Information* (2001), approximately 14 pages. Extended version published by *Journal of Design Research* **4, Issue 1** (March 2004).
- 71b. Finnish translation of the first half of 71a: “Kaupunki ei todellakaan ole puu”, *Yhteiskuntasuunnittelu — The Finnish Journal of Urban Studies* **39** (2001), pages 68-76.
- 72a. (J. H. Kunstler and N. A. Salingaros) “The End of Tall Buildings”, *PLANetizen* (September 2001), approximately 5 pages.

- 72b. Republished in: Bruce Ballenger, *The Curious Writer* (Pearson-Longman, New York, 2005), pages 249-254.
- 72c. Reprinted in: *Planetizen's Contemporary Debates in Urban Planning*, edited by Abhijeet Chavan, Christian Peralta & Christopher Steins (Island Press, Washington DC, 2007), pages 117-122.
- 72d. French translation: "La fin des bâtiments-tours", *Archicool* (October 2001), approximately 5 pages.
- 73a. Nikos Salingaros interviews Léon Krier: "The Future Of Cities: The Absurdity of Modernism", *PLANetizen* (November 2001), approximately 10 pages. Reprinted in *Urban Land Magazine* **61** (January 2002), 12-15.
- 73b. Italian translation, *Archimagazine* (2002), approximately 10 pages. Reprinted in *Il Covile* (2002). Reprinted as a Chapter of the book NO ALLE ARCHISTAR: IL MANIFESTO CONTRO LE AVANGUARDIE, in Italian, Libreria Editrice Fiorentina, 2009.
- 73c. Swedish translation, *Tvarsnitt* **Nr. 4** (2003).
- 73d. Spanish translation, *Ambiente* **No. 92** (Marzo de 2004).
- 74a. (N. A. Salingaros and T. M. Mikiten) "Darwinian Processes and Memes in Architecture: A Memetic Theory of Modernism", *Journal of Memetics — Evolutionary Models of Information Transmission* **6** (2001), approximately 18 pages.
- 74b. Reprinted in *DATUTOP Journal of Architectural Theory* **23** (2002), pages 117-139.
- 75a. (Michael W. Mehaffy and Nikos A. Salingaros) "Geometrical Fundamentalism", *Plan Net Online Architectural Resources* (January 2002), approximately 15 pages.
- 75b. Italian translation: "Il Fondamentalismo Geometrico", *Professione Architetto* (2002), approximately 15 pages. Improved translation published in *Il Covile*, **No. 108** (2002). Reprinted in *L'Inventario della Fierucola* (Firenze) **Nos. 24-25-26** (Agosto 2003), pages 24-38. Chapter in the book NO ALLE ARCHISTAR: IL MANIFESTO CONTRO LE AVANGUARDIE, in Italian, Libreria Editrice Fiorentina, 2009.
- 76a. (Michael W. Mehaffy and Nikos A. Salingaros) "The End of the Modern World", *PLANetizen* (January 2002), approximately 3 pages.
- 76b. Republished by *Open Democracy* (March 2002).
- 76c. Republished by *Orthodoxy Today* (November 2007).
77. "A Missed Learning Opportunity", *PLANetizen* (September 2002), approximately 3 pages.
- 78a. "Twentieth-Century Architecture as a Cult", *INTBAU Essays*, **Essay No. 3** (November 2002), approximately 6 pages.
- 78b. German translation, *UMBAU-VERLAG* (April 2004), approx. 5 pages.
- 79a. "Anti-architecture and Religion", *Sacred Architecture Journal*, **Issue 7** (2002), 11-13.

- 79b. Portuguese translation: “Anti-arquitectura e Religião”, *Brotéria* (Lisbon), **155** (November 2002), 381-388.
- 80a. (Nikos A. Salingaros and Michael W. Mehaffy) “Deconstructing The Decons: The World Trade Center Project Spotlights The Empire’s Newest Clothes”, *PLANetizen* (January 2003), approximately 3 pages.
- 80b. Republished in *Café l’Urbanité — Architecture* (January 2003), and by *Southeastern University (Nanjing, China)* (2004).
- 80c. Shortened version published in *The American Enterprise* **13, No. 2** (March 2003), 13.
- 80d. Spanish translation: “El Nuevo Traje del Emperador”, *Ambiente* **No. 90** (March 2003).
81. “Two Languages for Architecture”, *Plan Net Online Architectural Resources* (February 2003), approximately 8 pages.
- 82a. (Brian Hanson and Nikos Salingaros) “Death, Life, and Libeskind”, *Architectural Record Online — In the Cause of Architecture* (February 2003), approximately 10 pages. Shorter version published as “Daniel Libeskind’s Architecture of Death”, *2Blowhards* (January 2003), approximately 4 pages.
- 82b. Farsi version, *KHANEH Quarterly* **6&7** (Summer & Autumn 2004).
- 82c. French and Italian translations published in my books.
83. (Michael Mehaffy and Nikos Salingaros) “Adaptive evolution, not modernism, produces architecture ‘of our time’”, *The Post and Courier*(Charleston) 6 April 2003, page 13A.
- 84a. “The Danger of Deconstructivism”, *2Blowhards* (April 2003), approximately 8 pages (with an introduction by Michael Blowhard). Reprinted in “Anti-Architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.
- 84b. Italian version: “Il Pericolo del Decostruttivismo”, *Il Covile* **No. 123** (February 2003), approx. 3 pages.
85. “Connecting the Fractal City”, *Keynote address, Fifth Biennial of Town Planners in Europe* (Barcelona) (April 2003), approximately 17 pages. Section 7 entitled “‘Small-World’ Networks and the Fractal City” published by *PLANetizen* (October 2003), approximately 7 pages. Full paper published by *PLANUM — The European Journal of Planning On-line* (March 2004), approximately 17 pages.
- * Interview with *ORF Vienna — Austrian National Broadcasting Corporation*: “Connecting the Fractal City”, May 2003. Interview was taped and broadcast in English — German summary is posted on the web.
- 86a. “Pattern Language and Interactive Design”, *Poiesis Architecture* (Toulouse) **No. 15** (2003), pages 385-405. Earlier version entitled “How the Pattern Language Defines a Geometry for Urban Interfaces”, published in *Proceedings of the International Seminar: “Design With the Community”*, University of Rome III (2000), pages 15-21.
- 86b. French version, *Poiesis Architecture* (Toulouse) **No. 15** (2003), pages 385-405.

* Interview with *2Blowhards.com* (New York City): “A Week With Nikos Salingaros”, May 2003. Text-only version (without photos and the numerous reader’s comments) is available as a 20-page document. A Farsi version is available on Bahram Yousefi’s online architectural magazine (Tehran).

87. “The Sensory Value of Ornament”, *Communication & Cognition* **36, Nos. 3-4** (2003), pages 331-351.

88a. (L. Andrew Coward and Nikos Salingaros) “The Information Architecture of Cities”, *Journal of Information Science* **30, No. 2** (2004), pages 107-118. Republished by *Internet Changes Everything* (January 2004).

88b. Catalan version, published in *MCRIT — Sistemes de suport a la planificacio* (Barcelona) (December 2003), approx. 15 pages.

89. “The Derrida Virus”, *TELOS Number 126* (2003), pages 66-82.

* “Salingaros on Kahn”, *2Blowhards.com* (December 2003), approximately 4 pages.

90a. “New Paradigm Architecture”, *Chaos and Complexity Letters* **Vol. 1, No. 2** (2004), pages 101-106.

90b. Reprinted in: Nicoletta Sala, Editor, *Chaos and Complexity in the Arts and Architecture* (Nova Science Publishers, New York, 2007), pages 129-133.

90c. “Charles Jencks and the New Paradigm in Architecture”, longer version of 90a, appears as Part 2 of “Anti-Architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.

90d. Spanish version, *Ambiente* (Buenos Aires), **Number 97** (2006). Reprinted by *Arqa.com* (2006), and also by *Arqchile* (2006).

90d. Farsi version, *KHANEH Quarterly* (2005).

91a. “The New Acropolis Museum”, *2Blowhards.com* (29 February 2004), approximately 5 pages. Republished in *Temi di Stefano Borselli* **No. 196** (4 March 2004). Republished in *I Fileleftheri* (5 March 2004). Republished in *Archimagazine* (16 April 2004). Reprinted as Part 10 of “Anti-architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.

91b. Spanish version, *FORMA* (4 March 2004).

91c. Italian version, *Archimagazine* (16 April 2004).

92. Book Review of “*The Nature of Order*”, and an interview with Christopher Alexander (in English & French), *VOGUE HOMMES INTERNATIONAL* **15** (Printemps-été 2004), pages 116-119. English version reprinted as Part 12 of “Anti-Architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.

93. “Architectural Theory and the Work of Bernard Tschumi”, published in 9 sections by *2Blowhards* (April-May 2004). Reprinted as Part 11 of “Anti-Architecture and Deconstruction”, *Umbau-Verlag*, Solingen, 2004.

94. “Towards a Biological Understanding of Architecture and Urbanism: Lessons from Steven Pinker”, book review of Steven Pinker’s “The Blank Slate: The Modern Denial of Human Nature”, *Katarxis* **N° 3** (September 2004), approximately 3 pages.

95. “Design methods, Emergence, and Collective Intelligence”, *Katarxis N° 3* (September 2004), approximately 18 pages. Reprinted as Chapter 10 of *Principles of Urban Structure*, Techne Press, Amsterdam, Holland, 2005.
96. “Les gratte-ciel ont un effet destructeur sur la cité”, *SCIENCES ET AVENIR No. 691* (September 2004), page 63 (in french).
97. “Towards a New Urban Philosophy: The Case of Athens”, Chapter 20 of: *Shifting Sense — Looking Back to the Future in Spatial Planning*, edited by Edward Hulsbergen, Ina Klaasen & Iwan Kriens, Techne Press, Amsterdam, 2005, pages 265-280. Earlier version published in two parts as “City of Chaos” in *Greekworks.com* (May & June 2004).
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- (iii) [Criteria for an Intelligent Architecture](#) (with Kenneth Masden), 2 July 2018. Extract from an earlier article. Later translated into **CHINESE** and **SPANISH**.
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- * **CHINESE** version of the article [How to Judge a Building: Does it Make you Feel More, or Less Alive?](#) (with Kenneth G. Masden), *ArchDaily China*, 23 May 2019, and also on *iArch*, 22 January 2019. — [ENGLISH version](#) in *ArchDaily*, 7 December 2018. Originally entitled “[The Legacy of Christopher Alexander: Criteria for an Intelligent Architecture](#)“, *Common Edge*, 2 July 2018. — [Versión ESPAÑOLA](#), *Plataforma Arquitectura*, y también en [ArchDaily Colombia](#) | [México](#) | [Perú](#), 16 Diciembre, 2018. Is a portion of the longer article “[The Science of Intelligent Architecture](#)“, *Teka Komisji Urbanistyki i Architektury* (Krakow, Poland), Issue 45 (2017), pages 95-105.
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2. James Stevens Curl, [Building Bad](#), *Inference*, Vol. 5, Issue 1 (12 December 2019).
3. Martin Horacek, [Architects as Physicians](#), *Inference*, Vol. 5, Issue 2 (4 May 2020).
4. Michael Mehaffy, [An Obsolete Ideology](#), *Inference*, Vol. 5, Issue 2 (4 May 2020).
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6. Scott Simpson, [On Theory and Practice](#), *Inference*, Vol. 5, Issue 3 (2020).

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- * [The Modernist Federal Reserve Facade Is Headache-Inducingly Hideous And Should Be Abandoned Immediately](#), *The Federalist*, 18 June 2020.
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- * **book** — [A New Pattern Language for Growing Regions: Places, Networks, Processes](#), by Michael W. Mehaffy, Yulia Kryazheva, Andrew Rudd, Nikos A. Salingaros, with Ana Gren, Leslie Mehaffy, Steve Mouzon, Laura Petrella, Sergio Porta, Laurence Qamar, and Yodan Rofè, Sustasis Press, Portland with Centre for the Future of Places KTH Royal Institute of Technology, Stockholm and UN-Habitat, 2020. US edition by [Levellers Press](#), which supplies *Amazon.com* ([HERE](#)). European edition [HERE](#). Book launched at the *Tenth World Urban Forum*, Abu Dhabi, 12 February 2020. See the [initial announcement](#) for the project, which includes a pdf [free copy of the entire book](#). The Federated Wiki site [npl.wiki](#) has all the patterns available free online. *Architexturez* is also publishing [20 of the 80 new patterns free online](#).
- * [ARCHITECTURAL EDUCATION](#) — Curating two series of essays, linked to from *Architexturez*. Includes the [PUNE DECLARATION](#) and the [Background to the Pune Declaration](#).
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* The Future of Cities: Sustainability's Deceptive Dream, *FuturArc* (Singapore), Vol. 71 (December 2020), to appear. Expanded version of earlier essay in *Meeting of the Minds*.

189. [Connecting to the World: Christopher Alexander's Tool for Human-Centered Design](#), *She Ji: The Journal of Design, Economics, and Innovation*, Vol. 6, Issue 4 (2020), to appear. Extends material from the **videolecture** [Christopher Alexander's Process of Connecting](#), given to the *Building Beauty Post-Graduate Diploma in Architecture Program* on 21 May 2020. Develops the same topic from a previous talk for *Building Beauty* on 28 March 2019, **videolecture** and essay [Beauty and the Nature of Matter: The Legacy of Christopher Alexander](#), *New English Review*, 1 May 2019; reprinted in *Architexturez*, 22 July 2020.

190. Rules for Designing Urban Space: Local Human Scale, *Journal of Urban Research and Development*, submitted for publication.

Invited Talks

110. "Architectural Laws Below the Level of Style and Materials", talk presented to *Ford, Powell & Carson Architects*, San Antonio, Texas, 18 June 1996.

111. "The Life of a Carpet: An Application of the Alexander Rules", invited talk at the *Eighth International Conference on Oriental Carpets*, Philadelphia, Pennsylvania, 31 October - 4 November 1996.

112. "The Life of a Carpet: An Application of the Alexander Rules", invited talk to the *Houston Oriental Rug Society*, Houston, Texas, 20 March 1997.

113. "Life from Inanimate Matter: Applications to Architecture and Urban Design", talk given to the *Sustainable Building Coalition*, Austin, Texas, 17 September 1997.

114. "Life, Scale, and Architectural Complexity", colloquium, *Center for American Architecture and Design*, University of Texas at Austin, Austin, Texas, 10 October 1997.

115. "L-Complexity", Computer Science Colloquium, University of Texas at San Antonio, 24 April 1998.

116. "The Structure of Pattern Languages", talk given to U S West's Global Village Labs, Denver, Colorado, 5 August 1998.

117. "Modernism and the Suppression of Fractal Structures", Architecture Seminar, University of Texas at San Antonio, 17 November 1998.

118. "The Structure of Pattern Languages", talk given to the North Texas Patterns Group, Texas Instruments, Dallas, Texas 28 January 1999.

119. "Pattern Languages and Complexity", talk given at the Cajal Neuroscience Research Center, University of Texas at San Antonio, 29 January 1999.

120. "The Structure of Pattern Languages", Computer Science Seminar, University of Texas at San Antonio, 5 March 1999.

121. “Applications of Mathematics to Urban Morphology”, seminar, LEMA — Center for Architectural and Urban Design, University of Liege, Belgium, 31 May 1999.
122. “Mathematical Theory of the Urban Web”, Colloquium, Faculty of Architecture, Delft University of Technology, Delft, Holland, 4 June 1999.
123. “The Application of Mathematics to Urban Morphology”, seminar, Centre for Advanced Spatial Analysis, University of London, England, 10 June 1999.
124. “How the Pattern Language Defines a Geometry for Urban Interfaces”, invited talk at the International Workshop on Design with the Community — *Progettare Con La Comunità*, University of Rome, 13 - 14 April 2000.
125. “Geometry of Cities”, seminar at LEMA — Center of Architectural and Urban Design, University of Liege, Belgium, 25 May 2000.
126. “On Patterns”, seminar at Destiny Websolutions Inc., Conshohocken, Pennsylvania, 14 August 2000.
127. “Origins of Living Structure”, Applicable Mathematics Seminar, University of Texas at San Antonio, 22 September 2000.
128. “Origins of Living Structure: A Model for Architectural Beauty”, Colloquium, Center for the Study of Evolution and the Origin of Life, University of California at Los Angeles, 1 November 2000.
129. “Origins of Living Structure”, seminar, School of Architecture, University of Texas at San Antonio, 15 November 2000.
130. “A City is Not a Tree”, seminar at LEMA — Center of Architectural and Urban Design, University of Liege, Belgium, 6 June 2001.
131. “Remarks on a City’s Composition”, Colloquium, Faculty of Architecture, Delft University of Technology, Delft, Holland, 19 June 2001.
132. “The Future of Skyscrapers”, Radio Interview, *KEYS — Corpus Christi*, Texas, 19 September 2001.
133. “Complexity, Architecture, and Mathematics”, talk at Saint Mary’s Hall School, San Antonio, Texas, 8 November 2001.
134. “Pattern Language and the Nature of Order”, Master’s Course, University of Rome III, 3 April 2002.
135. “Two Languages for Architecture”, Invited Talk at the International Seminar: *Architecture, Community, and Participation*, Rome, Italy, 4 April 2002.
136. “Preserving Modern Architecture”, guest on *National Public Radio* <wbur.org>, 18 October 2002.
137. “Applications of the Golden Mean to Architecture”, Undergraduate Mathematics Seminar, University of Texas at San Antonio, 18 November 2002.
138. “Life in Architecture”, talk given to the *Sustainable Buildings Coalition*, Austin, Texas, 24 January 2003.

139. “New Science, New Architecture, New Urbanism”, lecture in the University of Notre Dame School of Architecture series *From Classicism to the Avant-Garde: Contemporary Directions in Architecture*, 10 February 2003.
140. “Connecting the Fractal City”, Keynote address, *Fifth Biennial of Town Planners in Europe*, Barcelona, 12 April 2003.
141. “The Network City”, master class at the Department of Urbanism, University of Delft, Holland, 19 June 2003.
142. “Fractals in Architecture and Urbanism”, Graduate Course, University of Texas at San Antonio, August-December 2003.
143. “The Network City”, talk at the Tecnológico de Monterrey, Santiago de Querétaro, Mexico, 18 February 2004.
144. “Theory of the Urban Web”, master class held at the Tecnológico de Monterrey, Santiago de Querétaro, Mexico, 19 February 2004.
145. “Urban Interventions in Queretaro”, Videoconference with the University of Delft, Holland, the Tecnológico de Monterrey, Santiago de Queretaro, Mexico, and the University of Texas at San Antonio, 15 April 2004.
146. “Design Methods, Emergence, and Collective Intelligence”, invited talk, *Inaugural Conference*, Delft School of Design, Delft, Holland, 10-12 June 2004.
147. “Analysis of Networks: Countryside, City, Metropolis”, presentation as member of the Plenary Panel, *Fifth International Seminar of the Network of Mexican Cities Towards Sustainability*, Santiago de Querétaro, Mexico, 7-9 October 2004.
148. “Connecting the Fractal City”, Opening Talk, *Fifth International Seminar of the Network of Mexican Cities Towards Sustainability*, Santiago de Querétaro, Mexico, 7-9 October 2004.
149. “Design Methods, Emergence, and Collective Intelligence”, invited seminar given in the series *Colloquium on Sustainability and Design*, Tecnológico de Monterrey, Santiago de Querétaro, Mexico, 8 October 2004.
150. “The Role of Mathematics in Understanding the World”, invited talk, Saint Mary’s Hall, San Antonio, Texas, 19 January 2005.
151. “Anti-Architecture and Deconstruction”, public lecture sponsored by the Casa de Luz, Austin, Texas, 25 March 2005.
152. “Principles of Urban Structure”, Architecture Colloquium, University of Texas at San Antonio, 11 April 2005.
153. “Principles of Urban Structure”, Colloquium and Book Presentation, University of Delft, Holland, 9 June 2005.
154. “A Scientist Looks at Achitecture”, Colloquium and Panel Discussion, The Prince’s Foundation, London, England, 16 June 2005.
155. “Three Lectures on Urban Structure”, Graduate Master Class in New Urbanism, Tecnológico de Monterrey, Queretaro, 30 September - 1 October 2005.

156. “Theory of Architecture”, series of presentations to the Senior Architecture Studio, University of Texas at San Antonio, September-December 2005.
157. “Cities as Systems”, invited seminar, Architecture School, University of Texas at San Antonio, 2 November 2005.
158. “Neuroscience, the Natural Environment, and Building Design”, *Bringing Buildings to Life Conference*, Yale University, held in Providence, Rhode Island, 10-12 May 2006.
159. “Evidence-Based Design”, Architecture Colloquium, Texas A&M University, College Station, 18 September 2006.
160. “Social Housing in Latin America”, Keynote Address, *Brazilian and Ibero-American Congress on Social Housing*, Florianopolis, Brazil, 14 November, 2006.
161. “Fractals and Urban Connectivity”, Lecture at the Graduate Design Studio, University of Texas at San Antonio School of Architecture, 19 February 2007.
162. “Fractals and City Form”, Lecture at *HARC — Houston Advanced Research Center*, Woodlands, Texas, 16 April 2007.
163. “Towards a More Intelligent Environment”, Colloquium, Architecture School of the University of Nancy, France, 8 June 2007.
164. “The Future of European Cities”, roundtable sponsored by MCRIT, Barcelona, 18 June 2007.
165. “The Network City”, Master Class, Polytecnic University of Catalonia, Barcelona, Spain, 19 June 2007.
166. “Intelligent Coast”, Invited Presentation in the Lecture Series “Intelligent Coast Debates”, Polytecnic University of Catalonia, Center of Contemporary Culture of Barcelona, Spain, 19 June 2007.
167. “Rubén Pesci and his role in the New Urbanism”, presentation of Rubén Pesci’s book “Ambitecture”, Museo de Arte Latinoamericana de Buenos Aires, Argentina, 10 July 2007.
168. “Principles of Urban Structure”, Lecture at the Universidad Abierta Interamericana, Buenos Aires, Argentina, 11 July 2007.
169. “A New Look at Architecture”, Lecture at the Fundación CEPA, La Plata, Argentina, 12 July 2007.
170. “Social Housing in Latin America”, Architecture Colloquium, Universidad Nacional de Buenos Aires, Argentina, 13 July 2007.
171. “Biophilic Mapping and Emotional Health”, invited talk at the Colorado Art Symposium, Durango, Colorado, 9 September 2007.
172. “The Network City”, keynote address, Conference on Structure–Process–Patterns, Technical University of Vienna, 6 December 2007.
173. “Biophilic Design”, invited talk at the DRESS Symposium, College of Architecture, University of Texas at San Antonio, 1 February 2008.

174. “Perforated, Bent, and Folded”, talk presented at the Congress for the New Urbanism, CNU XVI, Austin, Texas, 4 April 2008.
175. “The Network City”, keynote lecture in the Master’s Program for New Urbanism, Tecnológico de Monterrey, sede Querétaro, Mexico, 18 April 2008.
176. “Sustainable Urbanism”, invited talk at the *Forum for Urban Design Spring Conference*, New York City, 13 May 2008.
177. “Pedestrian-Scale Urbanism and the Future of Pristina”, Plenary talk, *Conference on Pristina Metropolis*, Pristina, Kosovo, 23 May 2008.
178. “A Form Language for Kosovar Architecture”, Master Class, AAB University, Pristina, Kosovo, 24 May 2008.
179. “Anti-architecture and Deconstruction”, talk at the Milan Politecnico University, Campus Leonardo, Milan, Italy, 5 June 2008.
180. “Connecting the Fractal City”, Architecture Master Class, Milan Politecnico University, Campus Bovista, Milan, Italy, 6 June 2008.
181. “The Return Towards Architectural Beauty”, Invited Talk, *Foundation CESAR*, Senatorial Palace, Campidoglio, Rome, Italy, 9 June 2008.
182. “Anti-architecture and Deconstruction: The End of Modernist Architecture”, public lecture sponsored by *Libreria Editrice Fiorentina*, Libreria Edison, Florence, Italy, 10 June 2008.
183. “Modernity in Tradition”, public lecture at the Orsanmichele sponsored by *Libreria Editrice Fiorentina*, Florence, Italy, 11 June 2008.
184. “Contemporary Church Architecture and Saint Augustine’s City of God”, public lecture at the Orsanmichele sponsored by *Libreria Editrice Fiorentina*, Florence, Italy, 11 June 2008.
185. “Bioarchitecture and Sustainability”, Colloquium at the *Istituto Nazionale Bioarchitettura*, Castello di Calenzano, Florence, Italy, 12 June 2008.
186. “Architecture Outside Geometrical Fundamentalism”, lecture at the Residenza Segesta sponsored by *ARCES*, Palermo, Sicily, 16 June 2008.
187. “The Project of Arati Isozaki for the Uffizi Galleries”, Keynote speaker at a panel discussion with Vittorio Sgarbi, *Circolo dei Liberi — Fondazione Magna Carta*, Florence, Italy, 19 September 2008.
188. “Connecting the Fractal Coast”, Plenary talk at the *7o Laboratorio Internazionale d’Architettura*, Università degli Studi Mediterranea di Reggio Calabria, Italy, 22 September 2008.
189. “Connecting the Fractal City”, Special Lecture, Ben-Gurion University, Israel, 18 November 2008.
190. “Favelas and Social Housing: The Urbanism of Self-Organization”, Special Lecture, Jacob Blaustein Center for Scientific Cooperation, Ben-Gurion University, Israel, 18 November 2008.

191. “An Architecture Outside Geometrical Fundamentalism”, Architecture Colloquium, Tel-Aviv University, Israel, 23 November 2008.
192. “Patterns and Symmetry Breaking”, Architecture Seminar, University of Texas at San Antonio, 23 February 2009.
193. “Patterns and Symmetry Breaking”, presentation to *Michael G. Imber Architects*, San Antonio, 4 March 2009.
194. “Urbanism as Computation”, *College of Sciences Research Conference 2009*, University of Texas at San Antonio, 7 August 2009.
195. “Architecture is made for people”, pre-conference talk given at Delft University of Technology, Delft, Holland, 23 September 2009.
196. “The classical tradition today”, pre-conference talk given at Delft University of Technology, Delft, Holland, 24 September 2009.
197. “Urbanism as Computation”, keynote speech at the *Complexity Theory of Cities Comes of Age Conference*, Technical University of Delft, Holland, 26 September 2009.
198. “Biophilic and participatory design”, Keynote lecture, *18th Europa Symposium*, Fiera SAIE di Bologna, Palazzo dei Congressi, Bologna, Italy, 30 October 2009.
199. “Universal scaling”, lecture at the Master’s Program on Bioarchitecture and Energy Sustainability, University of LUMSA, Rome, Italy, 31 October 2009.
200. “Psychological and physiological effects of architectural environments”, lecture followed by panel discussion and press conference (with Wittfrida Mitterer, Stefano Serafini, and Rosario Marrocco), Lalineabiancastudio, 81 via dei Gracchi, Rome, Italy, 31 October 2009.
201. “Religious architecture”, lecture followed by panel discussion (with Stefano Borselli and Pietro De Marco), Church of San Gaetano, Florence, Italy, 3 November 2009.
202. “Towards a new architecture”, lecture followed by panel discussion and presentation of my new book “No alle archistar” (with Gianfranco Di Pietro, Pietro Pagliardini, and Giannozzo Pucci), Libreria Edison, Piazza della Repubblica 27, Florence, Italy, 3 November 2009.
203. “Universal scaling and the Fibonacci sequence”, Architecture Colloquium, School of Architecture, University of Rome — Valle Giulia, 5 November 2009.
204. “A strategy for reconstructing sprawl”, press conference with Hon. Fabio Rampelli, Italian House of Representatives, Camera dei Deputati, Rome, Italy, 5 November 2009. Transmitted live on national television.
205. “Towards a new architecture”, lecture followed by presentation of my new book “No alle archistar”, CESAR Foundation, Sala Quironi, Palazzo degli Uffici Eur, Rome, Italy, 5 November 2009.
206. “Computational Urbanism”, videoconference, University of Rome III, 19 March 2010.

207. “Life and the Geomery of the Environment”, *The Athens Dialogues Organizational Conference*, Onassis Foundation, New York, New York, 16 April 2010.
208. “The Network City”, two lectures on urbanism at the University of Alcalá, Spain, 14 June 2010.
209. “Form Languages for Urban Regeneration”, Lecture at the *Berlage Institute*, Rotterdam, Holland, and discussion with Jeroen de Willigen of the architecture studio *De Zwarte Hond*, 23 June 2010.
210. “Urban and Information Architectures: A Cross-disciplinary Approach to Complexity”, joint online seminar with Roger Sessions, *International Association of Software Architects*, 17 July 2010.
211. “Nuovi modelli urbani tra scienza ed etica”, video lecture, *397o Fiera Vesuviana*, San Gennaro (Naples), 18 September 2010.
212. “The Fractal City”, video lecture, *CityCamp London*, 8 October 2010.
213. “Ricostruire Corviale”, Keynote video lecture, *Seminario sulla Trasformazione delle Periferie*, University of Ferrara, 21 October 2010.
214. “Principios de la Estructura Urbana”, video lecture to the *Tecnologico de Monterrey, sede Queretaro*, 22 October 2010.
215. “P2P Urbanism”, invited talk, *International Commons Conference* sponsored by the Heinrich Böll Foundation, Berlin, 1 November 2010.
216. “Human-scale urbanism”, video lecture in italian, Conference *Rigenerare la Periferia Italiana*, Ascoli Piceno, Italy, 4 November 2010.
217. “Life and the Geometry of the Environment” invited talk at the *The Athens Dialogues, Inaugural Conference of the Onassis Foundation*, Athens, 27 November 2010.
218. “Return to the City: the Work of the Gruppo Salingeros in Italy”, invited video presentation for the mayor of Rome Gianni Alemanno, *Projects for the International Workshop on the Roman Periphery*, 1 December 2010.
- (2011)
219. “Biophilia and New Urbanism”, film (in Greek) with George Papanikolaou, *Greekarchitects*, 24 January 2011.
220. “Alexander’s Fifteen Fundamental Properties”, lecture, *Saint Mary’s Hall School*, 21 April 2011.
221. “Architecture of Place and Peer-to-Peer Urbanism”, lecture at the *Project for Public Spaces*, New York City, 24 May 2011.
222. “Form Languages and Classical Mouldings”, lecture at the *Institute for Classical Architecture and Art*, New York City, 25 May 2011.

223. “Biophilia and the Quality of Life in Our Cities: Inspired by Classical Greek Ideas”, Commencement Address, *Center for Byzantine & Modern Greek Studies, Queen’s College, CUNY*, New York City, 26 May 2011.
224. “Participative Design and Pattern Languages”, presentation of the book “Participative Design” by A. Giangrande & E. Mortola, *Gangemi Editore*, Rome, 30 June 2011.
225. “Network City”, video presentation to the *IAAC — Institute for Advanced Architecture of Catalonia*, Barcelona, 19 July 2011.
226. “Urban Computations and Genomics”, Keynote address, *Framing the City Conference*, University of Manchester, 8 September 2011.
227. “La ciudad de las redes y el urbanismo de pares en pares”, teleconferencia, *2o Congreso Internacional sobre la Vivienda Social*, Universidad Nacional de Córdoba, Argentina, 21 de Septiembre 2011.
228. “Public Spaces, New Urbanism, Smart Growth”, invited talk, *The Philadelphia Society*, Cincinnati, 7-8 October 2011.
229. “Principles of Urban Structure”, *International Lecture Series: Achieving a Sustainable Built Environment*, Vienna University of Technology, 3 November 2011.
230. “Niente Grattacieli a Roma”, video per la *Conferenza Stampa sulla Commissione Grattacieli*, Comune di Roma, 15 Novembre 2011.

(2012)

231. “Organizational Complexity”, videolecture for the *Masters Program in Systems Engineering*, Universidad de los Andes, Bogotá, Colombia, 8 June 2012.
232. “Transformations: Architecture from Biology”, invited lecture at the *IAAC — Institute for Advanced Architecture of Catalonia*, Master in Advanced Architecture, Barcelona, 13 June 2012.
233. “Biourbanism: Theory and Practice”, videolecture for the *International Society of Biourbanism Summer School*, “Neuroergonomics and Urban Design”, Ardena/Rome Italy, 17 July 2012.
234. “Cities as Complex Systems”, videolecture to the *Laboratory of Geographic Information Systems*, École Polytechnique Fédérale de Lausanne, Switzerland, 9 August 2012.
235. “Biology, the city and responsible design”, *The 2012 Slater-Maguire Lecture*, Saint Margaret’s Church, Winnipeg, Canada, 15 October 2012.

(2013)

236. “Rethinking Urbanism in the Developing World”, Invited lecture, Columbia University, New York City, 18 February 2013.
237. “Tradition and Modernity in the development of (contemporary) Athens and Rome”, invited lecture, Center for Byzantine and Modern Greek Studies in cooperation with the Calandra Italian-American Institute, Queens College, City University of New York, 19 February 2013.

238. “Saving the best of New York from unsustainable development”, invited lecture, Urban Studies Program, Queens College, City University of New York, 20 February 2013.
239. “Culture, Tradition and Modernity in Architecture and Urbanism”, President’s Roundtable Keynote Lecture, Queens College, City University of New York, 20 February 2013.
240. “Culture, Tradition and Modernity in Architecture and Urbanism”, ICAA — Institute for Classical Art and Architecture, New York City, 20 February 2013.
241. “Saving Greek Cultural Heritage from Globalization”, Lecture to the Solon Society of Long Island, St. Paul Community Center, Hempstead, New York, 21 February 2013.
242. “Alexander’s Fifteen Fundamental Properties”, two guest lectures to the College of Architecture, University of Texas at San Antonio, 27 February 2013.
243. “Urban Complexity”, invited lecture, Master and Doctoral Program in Complexity Sciences, University of Lisbon ISCTE, Lisbon, Portugal, 7 June 2013.
244. “A Sustainable Energy Future for Mauritius”, Teleconference with the press in Mauritius, 1 March 2013 (AUDIO). Interview on Defimedia, 8 March 2013.
245. “Creating buildings and environments that support life”, 1-hour radio program with James Alexander Arnfinsen, LEVEVEI BAEREKRAFT I SKANDINAVIA, 27 October 2013.
- (2014)
246. “Instead of glass and concrete?” (in Polish), Marcin Gerwin on my work, Dziennik Opinii, 25 January 2014.
247. Interview in Portuguese with Fabio Duarte, Scielo em Perspectiva, 14 February 2014.
248. “Progettazione e Biourbanistica”, videoconferenza con l’Università di Roma III, 25 Febbraio di 2014.
249. “Designing a green public space”, joint videolecture to the University of Derby UK and the University of Bahrain, 4 March 2014.
250. Video entrevista, Escuela Técnica Superior de Arquitectura de la Universidad Politécnica de Madrid, 4 de junio de 2014.
251. “Urban Transitions to Sustainability”, Keynote speech, 4th Rencontres Internationales de Reims on Sustainability Studies, France, 26 June 2014.
252. “Biophilia as a Mechanism for Health”, lecture at the Architecture School, University of Texas at San Antonio, 16 September 2014.
253. “Compact City”, lecture to the CNU San Antonio, 30 September 2014.
- (2015)
254. Interview in NORWEGIAN by Ronny Spaans, on the new government buildings in Oslo, Dag Og Tid, 24 April 2015.

255. “New Directions for Human-Centered Urbanism”, talk given at the Congress for the New Urbanism CNU 23, Dallas, Texas, 2 May 2015.
256. “Urban Design Education”, Keynote Speech, VIDEO Agency/Agents of Urbanity, International PhD Colloquium, École Polytechnique Fédérale de Lausanne, Switzerland, 2 June 2015.
257. Pattern Language and Form Language, minicourse with 1/2 hour video online for the Built Environment Workshop, Academy for Democracy, Laajverd Visiting School, Neelum Valley, Kashmir, 25 July - 5 August 2015.
258. Four guest lectures at the School of Architecture, University of Texas at San Antonio: Eight points of biophilia, 3 September, Patterns for designing human spaces, 10 September, Connecting the Fractal City, 19 November 2015, Complexity in Architecture and Design, 1 December 2015.
259. “Urban Futures”, a series of three 20-30 minute videos outlining the future of cities, and the obstacles to building them correctly. Urban Design Education (May 2015) — Pattern Language and Form Language (July 2015) — Urban Futures for Intelligent Cities (October 2015). Published online by the Sustasis Foundation.
260. “Complexity in Architecture and Design”, powerpoint lecture, November 2015. (2016)
261. Three guest lectures, School of Architecture, University of Texas at San Antonio: The Geometry of Sustainable Architectures, 21 January. Biophilic Design, 22 & 24 March 2016.
262. Is Architecture Beautiful? Talk given to Saint Mary’s Hall School, San Antonio, Texas, 13 May 2016.
263. Eight city types and their interactions, Opening Keynote Presentation at the 11th International Congress on Virtual Cities and Territories, Krakow, Poland, 6 - 8 July 2016.
264. Towards a New Paradigm in Architecture and Urbanism (revised version of Is Architecture Beautiful?), 19th Seminar on Mathematical Physics, Southwest Research Institute, San Antonio, Texas, 25 July 2016.
265. Borders in Architecture and Urban Design: Science Explains How Life is Influenced by Physical Boundaries, invited lecture at the seminar Architecture and Cities in Transition, Tampere Design and Architecture Week, Tampere, Finland, 2 September 2016.
266. Patterns on the Urban Scale, Videolecture, T3xture Laboratory, Baltimore, Maryland, 22 September 2016.
267. Biophilia and Healing Environments, guest lecture, THW Design, San Antonio, Texas, 22 September 2016.
268. Extreme Urbanism, Plenary Videolecture, 2nd Spatial Development Forum, Saint-Petersburg, Russia, 27 September 2016.

269. Sprawl and the City, contributed talk at the American Planning Association State Conference, San Antonio, Texas, 4 November 2016.

(2017)

270. Architectural Education and Human Intelligence, Keynote/Plenary Address delivered via videoconference, Reinventing Design Pedagogy and Contextual Aesthetics, National Institute of Technology, Calicut-Kozhikode, India, 21 January 2017.

271. Evidence-Based Design, guest lecture, College of Architecture, University of Texas at San Antonio, 26 January 2017.

272. Applying Biophilia to Hospital Design, Desk Critique, THW Design, San Antonio, Texas, 6 February 2017.

273. Biophilic Design, two lectures via live video transmission, Architectural Theory Course, Texas A&M University, College Station, Texas, 16 & 30 October 2017.

274. Human-scaled architecture, invited lecture, First International Seminar on Architecture, Arkitekturupproret, Stockholm, Sweden, 21 September 2017.

275. How Neuroscience verifies Design Patterns, Biophilia, and the Mathematical rules for Healing Structure, Invited Talk, Neuroscience & Measuring the Experience of Place, Ax:son Johnson Foundation, Engelsberg-Stockholm, Sweden, 23 September 2017.

276. Helping Policy Makers to Sustainability, Keynote/Plenary Address presented via video, International Land Use Symposium, Leibniz Institute of Ecological Urban and Regional Development, Dresden, Germany, 1 November 2017.

277. Resilience and Sustainability, invited lecture at the College of Architecture, Illinois Institute of Technology, Chicago, Illinois, 16 November 2017.

278. This is your brain on preservation, keynote presentation, Chicago Past Forward Conference, National Trust for Historic Preservation, Chicago, Illinois, 16 November 2017.

279. The Babushkas of Chernobyl, panelist discussing the film by Holly Morris, Chicago Past Forward Conference, National Trust for Historic Preservation, Chicago, Illinois, 17 November 2017.

280. Adaptive Versus Random Complexity, lecture at the College of Architecture, University of Texas at San Antonio, 5 December 2017.

281. Thinking about resilience, keynote presentation, American Institute of Architects Conference on Resilience Thinking, Seattle, Washington, 11 December 2107.

282. Biophilia and Healing Environments, invited talk, CollinsWoerman Architects, Seattle, Washington, 12 December 2017.

283. Biophilia and Healing Environments, invited talk, Muñoz & Company Architects, San Antonio, Texas, 22 December 2017.

(2018)

* Biophilia and Design Patterns, invited lecture at *WestEast Design Group LLC*, San Antonio, Texas, 9 March 2018.

* Two guest lectures on Biophilia and Resilience, Course on Global Architecture, College of Architecture, UTSA, San Antonio, Texas, 27 March 2018.

* **videolecture** — Form Language, Pattern Language, and Complexity, lecture to the Building Beauty Master's Program, 13 April 2018.

* **videolecture** — Biophilia and Design Patterns, Texas A&M University, College Station, Texas, 20 April 2018.

* **videolecture** — Some Mathematical Notions in Urbanism, Keynote presentation, *Greek Mathematical Society International Conference*, Thessaloniki, Greece, 2 November 2018.

* **podcast** — [Nikos Salingaros on ancient resilience, emergence, and robots](#), discussion with Steve Moddemeyer, *Resilience 2100*, 6 March 2018.

(2019)

* Christopher Alexander's Fifteen Properties, invited lecture, UTSA College of Architecture, San Antonio, Texas, 12 February 2019.

* Biophilia & Resilience, two invited lectures, Course on Global Architecture, College of Architecture, UTSA, San Antonio, Texas, 19 & 21 March 2019.

* The Fractal City, invited talk, Urban and Regional Planning, College of Architecture, UTSA, San Antonio, Texas, 8 April 2019.

* Design for a Living Planet, invited presentation, *Overland Partners Academy*, San Antonio, Texas, 26 March 2019.

* Collective Intelligence, invited presentation, Trinity University, San Antonio, Texas, 15 February 2019.

* **slides** — [Is Beauty the Purpose of Life?](#), Acceptance Speech for the *2019 Stockholm Culture Award for Architecture*, Stockholm, Sweden, 9 March 2019 ([brief video after the ceremony](#)). [Photo](#) from a speech given at a private gathering at the Chancellor's house on 10 March 2019.

* “The future of architecture and architectural education”, interview with Audun Engh (Director of INTBAU Norway — International Network for Building, Architecture & Urbanism) for *Dag og Tid* weekly magazine, Oslo, Norway. Conducted at *KTH University*, Stockholm, Sweden, 8 March 2019.

* “[Architecture and Beauty](#)”, radio program with Martin Pedersen and Donald Ruggles, hosted by Duo Dickinson, *Common Edge*, published 7 May 2019. Also on the [WPKN 89.5 FM Connecticut](#) radio station site (recorded 28 February 2019).

* [Neuroscience experiments to verify the geometry of healing environments: Proposing a biophilic healing index of design and architecture](#), paper presented at the *Ux+Design/2019 Conference*, Tufts University, Medford, Massachusetts, 26 April 2019 ([PHOTO](#)). Chapter 4 in: Justin Hollander and Ann Sussman, Editors, [Urban](#)

[*Experience and Design: Contemporary Perspectives on Improving the Public Realm*](#), Routledge, New York and London, 2020, pages 58-72.

* How Mathematics creates meaning in Architecture, keynote presentation, [4th International Seminar of Architecture and Mathematics: Formulas in Architecture](#), Centro de Investigação em Território Arquitectura e Design, Universidade Lusíada de Lisboa, Lisbon, Portugal, 21 November 2019. To appear in the conference proceedings.

* **videolecture** — [Invited talk to the Association of Architects](#), St. Petersburg, Russia, lecture in English with RUSSIAN subtitles, 24 June 2019.

* **videolecture** — [Biophilic Design and Human-Scale Urbanism](#) (discusses the ten biophilic factors), opening presentation in the lecture series “Biophilia in the Built Environment”, sponsored by *Overland Partners* and *AIA San Antonio*, San Antonio, Texas, 28 May 2019.

* **videolecture** — Fractal City, Video Conference Seminar, [Eastern Mediterranean University, Department of Architecture, in collaboration with UTSA Department of Architecture, Urban and Regional Planning Graduate Program](#), 29 April 2019. Some pictures [HERE](#).

* **videolecture** — Complexity, uncertainty, and architecture, lecture to the Building Beauty Postgraduate Diploma in Architecture, Sorrento, Italy, 22 March 2019.

* **videolecture** — [The legacy of Christopher Alexander: beauty and the nature of matter](#), *Nature of Order Seminar Series*, presented over the Internet to the *Building Beauty Master’s Program*, Sorrento, Italy, 28 March 2019. Corresponding [article](#) published in *New English Review*, 1 May 2019.

* **videolecture** — [Design for a Living Planet](#), presented to *Overland Partners Architecture Academy*, San Antonio, Texas, 26 March 2019.

* **videolecture** — [Science, Biophilia, and the Evolution of Architecture](#), *Athena Lecture Series, Centre for the Future of Places, KTH University*, Stockholm, Sweden, 11 March 2019.

* A new pattern language, presentation at the Research Symposium on Public Space and Christopher Alexander’s Work, *Centre for the Future of Places, KTH University, Stockholm*, Sweden, 8 March 2019.

* **videolecture** — Problems and solutions in educational reform, invited presentation to the *Conference on the Future of Architectural Education*, Pune, India, 17 November 2019.

* Biophilia and healing environments, invited presentation, *Lake Flato Architects*, San Antonio, Texas, 13 December 2019.

(2020)

* **videolecture** — [La Città Post-Covid PARTE I, PARTE II](#), intervista in italiano con Alessandro Bucci e Gabriele Tagliaventi, *A Vision of Europe*, 27 maggio 2020.

- * **video** — [New ideas for Latin American urbanism](#), keynote address to the *International Congress, PROPUR*, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 19 March 2020. In English with Portuguese subtitles.
- * **videolecture** — [Christopher Alexander’s Process of Connecting](#), talk given to the *Building Beauty Post-Graduate Diploma in Architecture Program*, 21 May 2020, published on *YouTube*, 19 August 2020. Expanded into an article for [She Ji: The Journal of Design, Economics, and Innovation](#), Vol. 6, Issue 4 (2020), in press.

APPENDIX

Publications in Mathematics and Physics 1979-1997.

1. (N. Salingaros and M. Dresden) “Properties of an Associative Algebra of Tensor Fields. Duality and Dirac Identities”, *Physical Review Letters* **43** (1979), 1-4.
2. “Realization and Classification of the Universal Clifford Algebras as Associative Lie-Admissible Algebras”, *Hadronic Journal* **3**(1979), 339-389.
3. “Realization, Extension, and Classification of Certain Physically Important Groups and Algebras”, *Journal of Mathematical Physics* **22** (1981), 226-232.
4. “Clifford, Dirac, and Majorana Algebras, and Their Representations”, *Hadronic Journal* **4** (1981), 949-980.
5. “Electromagnetism and the Holomorphic Properties of Spacetime”, *Journal of Mathematical Physics* **22** (1981), 1919-1925.
6. (Y. Ilamed and N. Salingaros) “Algebras With Three Anticommuting Elements. I. Spinors and Quaternions”, *Journal of Mathematical Physics* **22** (1981), 2091-2095.
7. “Algebras With Three Anticommuting Elements. II. Two Algebras Over a Singular Field”, *Journal of Mathematical Physics* **22**(1981), 2096-2100.
8. “On the Classification of Clifford Algebras and Their Relation to Spinors in n Dimensions”, *Journal of Mathematical Physics* **23**(1982), 1-7.
9. (N. Salingaros and M. Dresden) “Physical Algebras in Four Dimensions. I. The Clifford Algebra in Minkowski Spacetime”, *Advances in Applied Mathematics* **4** (1983), 1-30.
10. “Physical Algebras in Four Dimensions. II. The Majorana Algebra”, *Advances in Applied Mathematics* **4** (1983), 31-38.
11. “Particle in an External Electromagnetic Field”, *Physical Review* **D28** (1983), 2473-2476.
12. “Relativistic Motion of a Charged Particle, the Lorentz Group, and the Thomas Precession”, *Journal of Mathematical Physics* **25**(1984), 706-716.

13. "The Relationship Between Finite Groups and Clifford Algebras", *Journal of Mathematical Physics* **25** (1984), 738-742.
14. (J. Froelich and N. Salingaros) "The Exponential Mapping in Clifford Algebras", *Journal of Mathematical Physics* **25** (1984), 2347-2350.
15. (N. Salingaros and Y. Ilamed) "Algebraic Field Descriptions in Three-Dimensional Euclidean Space", *Foundations of Physics* **14**(1984), 777-797.
16. (R. Ablamowicz and N. Salingaros) "On the Relationship Between Twistors and Clifford Algebras", *Letters in Mathematical Physics* **9** (1985), 149-155.
17. "The Gyrofrequency of a Charged Particle in a Constant Electromagnetic Field", *Nuovo Cimento* **B86** (1985), 1-16.
18. "Invariants of the Electromagnetic Field and Electromagnetic Waves", *American Journal of Physics* **53** (1985), 361-363.
19. "Particle in an External Electromagnetic Field. II. The Exact Velocity in a Constant and Uniform Field", *Physical Review* **D31**(1985), 3150-3156.
20. "Some Remarks on the Algebra of Eddington's E-numbers", *Foundations of Physics* **15** (1985), 683-691.
21. (N. Salingaros and G. P. Wene) "The Clifford Algebra of Differential Forms", *Acta Applicandae Mathematicae* **4** (1985), 271-292.
22. "The Gyrofrequency of a Charged Particle in a Constant Electromagnetic Field. II. The General Result", *Nuovo Cimento* **B90**(1985), 232-253.
23. "The Lorentz Group and the Thomas Precession. II. Exact Results for the Product of Two Boosts", *Journal of Mathematical Physics* **27** (1986), 157-162.
24. "On Solutions of the Equation $\text{Curl } \mathbf{a} = k \mathbf{a}$ ", *Journal of Physics A: Mathematical and General* **19** (1986), L101-L104.
25. "On Solutions of the Equation $\text{Curl } \mathbf{a} = k \mathbf{a}$. II. The Magnetic Force-Free Model", *Journal of Physics A: Mathematical and General* **19** (1986), L705-708.
26. "Clifford Algebras and the Vee Product", in: *Proceedings of the Fourteenth International Colloquium on Group-Theoretical Methods in Physics*, Y. M. Cho, editor (World Scientific, Singapore, 1986), pp. 257-260.
27. "Clifford Algebraic Symmetries in Physics", in: *Symmetries in Science II*, B. Gruber and R. Lenczewski, editors (Plenum, New York, 1986), pp. 467-470.
28. "Duality Rotations and Relativistic Charged-Particle Motions", *American Journal of Physics* **55** (1987), 352-356.
29. "Electromagnetism and the Holomorphic Properties of Spacetime", in: *Proceedings of the Fifteenth International Conference on Differential Geometric Methods in Theoretical Physics*, H. D. Doebner and J. D. Hennig, editors (World Scientific, Singapore, 1987), pp. 370-376.
30. "An Alternative Description of the Reversed-Field Toroidal Plasma Pinch, and Prediction of the Critical Pinch Parameter", *Hadronic Journal* **10** (1987), 109-116.

31. "Which are the Fundamental Magnetic Field Configurations in Nature?", *International Journal of Modern Physics* **B1** (1987), 1329-1349.
32. "An Amended Magnetohydrodynamic Equation Which Predicts Field-Aligned Current Sheets", *Astrophysics and Space Science* **137** (1987), 385-395.
33. "Magnetic Force-Free Configurations for Thermonuclear Fusion", *Physics Essays* **1** (1988), 92-101.
34. "Further Developments in the Theory of the Spheromak", in: *Proceedings of the Ninth U. S. Compact Toroid Symposium*, Seattle, 1989. Edited by A. L. Hoffman and L. C. Steinhauer (Spectra Technology, Bellevue, Washington, 1989), pp. 37-40.
35. "Origin of the Magnetic Confinement Force in the Homogeneous Z-pinch", *IEEE Transactions on Plasma Science* **17** (1989), 854-858.
36. "The Spheromak as an Axisymmetric Spherical Dynamo: Clarification of an Old Ambiguity", *Modern Physics Letters* **B3** (1989), 1285-1292.
37. "Lorentz Force and Magnetic Stress in Force-Free Configurations", *Applied Physics Letters* **56** (1990), 617-619.
38. (D. P. Singh, M. A. Harith, V. Palleschi, G. Tropiano, M. Vaselli, N. Salingaros, and E. Panarella) "The Spherical Pinch: Generalized Scaling Laws and Experimental Verification of the Stability of Imploding Shock Waves in Spherical Geometry", *Laser and Particle Beams* **8** (1990), 253-263.
39. "Optimal Current Distribution for Energy Storage in Superconducting Magnets", *Journal of Applied Physics* **69** (1991), 531-533.
40. "Magnetohydrostatic Equilibria and Force-Free States", *Physica Scripta* **43** (1991), 316-322.
41. "Fiber Theory: Evolution and Disruption in the Gaseous and Dense Z-pinches", *Physica Scripta* **43** (1991), 416-422.
42. (N. Salingaros and R. Carrera) "Electromechanical Description of Tokamak Plasma Operation by Fiber Theory", *Fusion Technology* **19** (1991), 1302-1306.
43. "A Simplified Approach to Pinch Equilibrium", *Plasma Physics and Controlled Fusion* **34** (1992), 191-202.
44. "Force-free Plasma Currents Driven by Electromagnetic Oscillations with \mathbf{E} parallel to \mathbf{B} ", *Physical Review* **A45** (1992), 8811-8815.
45. "General Construction of Force-Free Current Filaments", *Physical Review* **A45** (1992), 8816-8820.
46. "Fiber Theory and Cosmic Plasmas", *IEEE Transactions on Plasma Science* **20** (1992), 893-897.
47. (M. A. Sweeney, I. Alexeff, I. Brown, J. Glowienka, S. Gold, J. Maenchen, J. R. Roth, N. Salingaros, L. Steinhauer, and L. Sugiyama) "Statement by the Energy Policy Committee, Institute of Electrical and Electronics Engineers, on the FY-1993 Department of Energy Budget Request for Fusion Energy", *IEEE Nuclear and Plasma Sciences Society News*, No. 2, June 1992, 6-9. Reprinted in: *Fusion Technology* **23**

- (1993), 131-134; and in: Spherical Plasma Configuration Group Newsletter **2** No. 1 (1993), 37.
48. (N. Salingaros and R. Carrera) “Oscillation and Reconnection of Plasma Fibers in a Description of Tokamak Phenomena”, *Fusion Technology* **23** (1993), 257-266.
49. (P. Lorrain and N. Salingaros) “Local Currents in Magnetic Flux Tubes and Flux Ropes”, *American Journal of Physics* **61** (1993), 811-817.
50. “A Classification of Magnetohydrodynamic Generators with Cylindrical Symmetry”, *Europhysics Letters* **24** (1993), 467-472.
51. “A Description of Self-exciting Dynamos in Cartesian and Cylindrical Geometries”, *Physics Letters A* **185** (1994), 201-205.
52. “A Critical Comparison Between Magnetic and Inertial Confinement Schemes and their Geometries”, *Fusion Technology* **27**(1994), 230-236.
53. (B. Coppi, C. Deutsch, E. Panarella, F. Pegoraro, R. F. Post, H. U. Rahman, N. Rostoker, J. R. Roth, N. A. Salingaros, G. Velarde, C. Yamanaka) “Report on the International Symposium Evaluation of Current Trends in Fusion Research”, *Journal of Fusion Energy***14** (1995), September Issue (pages 281-327).
54. (F. Giammanco, E. Panarella, N. A. Salingaros, D. P. Singh, M. Vaselli) “Spherical Pinch Research: Historical Background, Achievements, and Projections”, in: *Proceedings of the First International Workshop on the Evaluation of Current Trends in Fusion Research*, Washington, DC 1994, edited by E. Panarella (Plenum Press, New York, 1997), pages 67-118.

Scientific presentations 1979-1997.

1. “Algebraic Derivation of Trace Identities in Quantum Electrodynamics”, seminar, Physics Department, University of Rochester, January 1979.
2. “Derivation of Trace Identities in Scattering Theory without Matrices”, seminar, Physics Department, Oxford University, England, June 1979.
3. “Classification of Clifford and Jordan Algebras”, Physics Colloquium, University of Dortmund, Germany, July 1979.
4. “Realization and Classification of the Universal Clifford Algebras as Associative Lie-Admissible Algebras”, invited talk at the *Second Workshop on Lie-Admissible Formulations*, Harvard University, 1-8 August 1979.
5. “Construction and Classification of the Clifford Algebras”, Physics Colloquium, University of Massachusetts at Boston, August 1979.
6. “Electromagnetism as an Extension of Holomorphy to Four-dimensional Spacetime”, Mathematics Colloquium, University of Delaware, January 1980.
7. “Spacetime Implies Maxwell’s Equations”, contributed talk, American Physical Society New England Conference, University of Rhode Island, 19 April 1980.

8. "Spinors and the Intrinsic Geometry of Three-Dimensional Space", Society of Physics Students lecture, University of Massachusetts at Boston, April 1980.
9. "The Geometry of Clifford Algebras", seminar, Physics department, Case-Western-Reserve University, Cleveland, June 1980.
10. "Clifford, Dirac, and Majorana algebras, and their Representations", invited talk at the *Third Workshop on Lie-Admissible Formulations*, University of Massachusetts at Boston, 4-9 August 1980.
11. "A Matrix-free Method for Quantum Electrodynamics", Colloquium, Demokritos Nuclear Research Center, Athens, Greece, February 1981.
12. "Applications of Clifford Algebras to Theoretical Physics", Physics Colloquium, University of Crete, Iraklion, Greece, 7 April 1981.
13. "On the Classification of Clifford Algebras and Spinors", Mathematics Colloquium, University of Crete, Iraklion, Greece, April 1981.
14. "Applications of the Methodology of Theoretical Physics to Architectural Design: The Pattern Language of Christopher Alexander", invited talk at the *International Conference on Architecture*, University of Thessalonike, Greece, 4 June 1981.
15. "On an Extension of the Theorems of Frobenius and Hurwitz", invited talk at the *Fourth Workshop on Lie-Admissible Formulations*, Institute for Basic Research, Cambridge, Massachusetts, August 1981.
16. "Some Recent Applications of Clifford Algebras to Theoretical Physics", Physics Colloquium, Washington University, St. Louis, 14 December 1981.
17. "A History of Clifford Algebras, and their Application in Physics", Physics Colloquium, University of Miami, Coral Gables, 23 March 1982.
18. "Applications of Clifford Algebras in Physics", Physics Colloquium, University of Iowa, 5 April 1982.
19. "The Geometric Structure of Clifford algebras, and their Relation to Spinors", Mathematics Colloquium, Iowa State University, Ames, 13 April 1982.
20. "Clifford algebras as an Extension of the Frobenius and Hurwitz Theorems", Mathematics Colloquium, University of Iowa, Iowa City, 13 April 1982.
21. "A History of Clifford Algebras, and their Application in Physics", Physics Colloquium, University of Illinois at Chicago Circle, 21 April 1982.
22. "An Introduction to Gauge Theories", three invited seminars, Mathematics Department, University of Iowa, 24 June-1 July 1982.
23. "Classification of Clifford Algebras", contributed talk, *American Physical Society Meeting*, University of Maryland, November 1982.
24. "Applications of Clifford Algebras in Theoretical Physics", opening talk, *Joint Meeting of the Mathematical Association of America and the Society for Industrial and Applied Mathematics*, Iowa State University, April 22-23, 1983.

25. "A New Solution for the Motion of a Charged Particle in a Constant, Homogeneous Electromagnetic Field", Space Physics Seminar, University of Iowa, 4 May 1983.
26. "Construction and Applications of Clifford Algebras", Mathematics Colloquium, University of Texas at San Antonio, 14 June 1983.
27. "Relativistic Motion of a Charged Particle, the Lorentz Group, and the Thomas Precession", contributed talk at the *VIIIth International Congress on Mathematical Physics*, University of Colorado, Boulder, 1-10 August 1983.
28. "Differential Forms and Clifford Algebras", contributed talk at the *VIIIth International Congress on Mathematical Physics*, University of Colorado, Boulder, 1-10 August 1983.
29. "A Solution of a Class of Differential Equations in Clifford Algebras", invited talk at the *VIIIth Congress of Balkan Mathematicians*, Athens, Greece, 19-23 December 1983.
30. "Motion of a Charged Particle in an Electromagnetic Field", seminar, Politecnico di Torino, Italy, 12 January 1984.
31. "Particle in an External Electromagnetic Field", contributed talk, *American Physical Society Annual Meeting*, San Antonio, 30 January-2 February 1984.
32. "Invariants of the Electromagnetic Field and Electromagnetic Waves", Mathematics Seminar, University of Texas at San Antonio, 13 April 1984.
33. "Motion of a Charged Particle in an Electromagnetic Field", contributed paper, *XIIIth International Colloquium on Group Theoretical Methods in Physics*, University of Maryland, 21-25 May 1984.
34. "Some Applications of Clifford Algebras", Mathematics Colloquium, Trinity University, San Antonio, 4 September 1984.
35. "Applications of Clifford Algebras to Physics", Physics Colloquium, University of California at Davis, 7 January 1985.
36. "The Exponential Mapping in Clifford Algebras", contributed talk, *91st. American Mathematical Society Annual Meeting*, Anaheim, 7-13 January 1985.
37. "Inequivalence of the $+++$ Metric to the $---$ Metric", Mathematics Seminar, University of Texas at San Antonio, 15 February 1985.
38. "The Gyration of a Charged Particle", contributed talk, *American Physical Society Meeting*, Texas Section, Rice University, Houston, 8-9 March 1985.
39. "About Clifford and Grassmann Algebras", seminar, Department of Theoretical Physics, University of Salerno, Italy, 22 May 1985.
40. "Review of Clifford Algebras in Physics", Physics Colloquium, University of Florence, Italy, 3 June 1985.
41. "Clifford Algebras and Differential Forms", seminar, Institute of Mathematics, University of Genova, Italy, 10 June 1985.

42. "Clifford Algebras and the Vee Product", seminar, National Institute for Nuclear Physics, University of Torino, Italy, 12 June 1985.
43. "Some Applications of Clifford Algebras", invited talk given at the *14th International Colloquium on Group Theoretical Methods in Physics*, Seoul, Korea, 26-30 August 1985.
44. "Rotation Correction to Combined Lorentz Boosts", contributed talk, *American Physical Society meeting*, Texas Section, Texas A&M University, 8-9 November 1985.
45. "Magnetic Fields in Physics and Astrophysics", Society of Physics Students Lecture, University of Texas at San Antonio, 3 December 1985.
46. "On Solutions of the Equation $\text{Curl } \mathbf{a} = k\mathbf{a}$ ", contributed talk at the *92nd American Mathematical Society Annual Meeting*, New Orleans, 5-11 January 1986.
47. "Clifford Algebraic Symmetries in Physics", invited talk, *Symmetries in Science II*, Southern Illinois University, Carbondale, 24-26 March 1986.
48. "On Force-Free Magnetic Fields", contributed talk, *Symmetries in Science II*, Southern Illinois University, Carbondale, 24-26 March 1986.
49. "Motion of Electrically Charged Particles in a Magnetic Field", Society of Physics Students Lecture, University of Texas at San Antonio, 29 April 1986.
50. "Some Recent Applications of Clifford Algebras", Relativity Seminar, Enrico Fermi Institute, University of Chicago, 20 June 1986.
51. "Existence of Force-Free Magnetic Fields", contributed talk at the *168th Meeting of the American Astronomical Society*, Iowa State University, Ames, 22-26 June 1986.
52. "Quantum Mechanical Projection Operators in the Clifford Algebra", Theoretical Physics Seminar, University of Dortmund, Germany, 21 July 1986.
53. "Electromagnetism and the Holomorphic Properties of Spacetime", invited talk, *XVth International Conference on Differential Geometric Methods in Theoretical Physics*, University of Clausthal, Germany, 28 July-1 August 1986.
54. "Clifford Algebras and their Role in Mathematics, Physics, and Technology", Relativity Seminar, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, 17 November 1986.
55. "Energy of Static Magnetic Field Configurations", invited talk, Special Section on Mathematical Physics, *93rd Annual American Mathematical Society Meeting*, San Antonio, Texas, 21-24 January 1987.
56. "Electromagnetic Waves as Duality Rotations", Clifford Algebra Seminar, University of Namur, Belgium, 25 May 1987.
57. "Some Physical Applications of Clifford Algebras", invited talk, Institute for Analysis, University of Ghent, Belgium, 26 May 1987.
58. "An Alternative Derivation of the Critical Toroidal Pinch Parameter", contributed talk, *Division of Plasma Physics of the American Physical Society*, 29th Annual Meeting, San Diego, California, 2-6 November 1987.

59. "Flux Conversion and the Taylor State", contributed paper, *U. S. -Japan Workshop on Plasma Turbulence*, University of Texas at Austin, 7-10 December 1987.
60. "Force-Free Magnetic Configurations for Thermonuclear Fusion", Physics Colloquium, University of North Texas, Denton, 16 February 1988.
61. "The Role of Clifford Algebras in Physics: A Broad Perspective", Theoretical Physics Seminar, University of North Texas, Denton, 17 February 1988.
62. "Clifford Algebras in Quantum Mechanics", Quantum Logics Seminar, Georgia Institute of Technology, Atlanta, Georgia, 27 April 1988.
63. "Minimum-Energy Magnetic States in the Spheromak", Plasma Physics Seminar, Princeton Plasma Physics Laboratory, Princeton, New Jersey, 19 May 1988.
64. "Magnetic Force-Free Configurations", contributed talk, *15th. IEEE International Conference on Plasma Science*, Seattle, Washington, 6-8 June 1988.
65. "General Description of Clifford Algebras", Theoretical Physics Seminar, University of Rochester, 9 September 1988.
66. "Plasma Strings in Astrophysics", Astrophysics Seminar, University of Rochester, 26 September 1988.
67. "Revised Stability of a Z-Pinch", seminar, Laboratory for Laser Energetics, University of Rochester, 26 October 1988.
68. "Internally Force-Free Current Surfaces", contributed talk, *30th. Annual Meeting of the American Physical Society*, Division of Plasma Physics, Hollywood, Florida, 31 October-4 November 1988.
69. "Improvement on the Approximations of the Scaling Laws for Spherical Pinch Experiments", contributed paper, *30th. Annual Meeting of the American Physical Society*, Division of Plasma Physics, Hollywood, Florida, 31 October-4 November 1988 (presented by E. Panarella).
70. "Revision of the Theory of Force-Free Minimum-Energy States", seminar, Institute of Plasma and Fusion Research, University of California at Los Angeles, 8 March 1989.
71. "Further Developments in the Theory of the Spheromak", contributed talk, *9th U. S. Compact Toroid Symposium*, Seattle, Washington, 14-15 March 1989.
72. "Clifford Algebras, Differential Forms, and Magnetic Fields", Mathematics Colloquium, Rochester Institute of Technology, 14 April 1989.
73. "MILO: An Algebraic Manipulation Program for the MACINTOSH Computer", invited talk at the *IVth. Topical Conference on the Applications of Computers to Teaching*, University of Texas at San Antonio, 21 July 1989.
74. "New Results in Magnetohydrostatics: Ideal Plasma as a High-Temperature Superconductor", contributed talk, *31st. Annual Meeting of the American Physical Society*, Division of Plasma Physics, Anaheim, California, 13-17 November 1989.

75. Panelist on: "Let's Bridge the Gap: Addressing the Crisis in Mathematics Education", *National Science Foundation Topical Conference*, San Antonio, Texas, 2 December 1989.
76. "The Spheromak as an Axisymmetric Spherical Dynamo", contributed paper at the *1990 IEEE International Conference on Plasma Science*, Oakland, California, 21-23 May 1990.
77. "The Theory of Fibers: A New Description of Plasmas", seminar, Spectra Technology, Bellevue, Washington, 25 June 1990.
78. "Electromechanical Description of Tokamak Plasma Operation by Fiber Theory", contributed paper, *Ninth Topical Meeting on the Technology of Fusion Energy*, Oak Brook, Illinois, 7-11 October 1990 (presented by R. Carrera).
79. "Electromagnetism and Clifford Algebras", Graduate Electrical Engineering Seminar, University of Texas at San Antonio, 8 November 1990.
80. "Theory of Fibers: A New Description of Plasmas", contributed talk, *32nd. Annual Meeting of the Division of Plasma Physics, American Physical Society*, Cincinnati, Ohio, 12-16 November 1990.
81. "Preliminary Description of Tokamak Operation Using Fiber Theory", contributed paper, *32nd. Annual Meeting of the Division of Plasma Physics, American Physical Society*, Cincinnati, Ohio, 12-16 November 1990 (with R. Carrera).
82. "A Numerical Evaluation of the Spherical Pinch as a Possible Fusion Device", contributed paper, *32nd. Annual Meeting of the Division of Plasma Physics, American Physical Society*, Cincinnati, Ohio, 12-16 November 1990 (presented by E. Panarella).
83. "Towards a New Theory of Plasmas", contributed talk, *Winter Meeting of the American Physical Society*, San Antonio, Texas, 21-24 January 1991.
84. "Force-Reduced Configurations in Superconducting Magnets", Magnet Division Seminar, Superconducting Super Collider, Dallas, Texas, 25 March 1991.
85. "Clifford Algebras and their Applications to Physics", Theoretical Physics Seminar, University of North Texas, Denton, Texas, 15 April 1991.
86. "A New Theory of Plasmas", Physics Colloquium, University of North Texas, Denton, Texas, 16 April 1991.
87. "Lorentz Force and Magnetic Stress in Force-Free Configurations", Colloquium, National Institute for Fusion Science, Nagoya University, Japan, 5 July 1991.
88. "Fiber Theory in Fusion Plasmas and Superconducting Magnets", Physics Colloquium, Nihon University, Tokyo, Japan, 22 July 1991.
89. "New Developments Towards Thermonuclear Fusion", Mathematics Colloquium, Southern Methodist University, Dallas, Texas, 16 October 1991.
90. "Electromagnetic Field Theory of Nonlinear Complex Systems", Applied Mathematics Seminar, Southern Methodist University, Dallas, Texas, 1 November 1991.

91. "Oscillation and Reconnection of Plasma Fibers in a Description of Tokamak Phenomena", contributed talk, *33rd. Annual Meeting, Division of Plasma Physics of the American Physical Society*, Tampa, Florida, 8 November 1991 (presented by R. Carrera).
92. "Recent Developments Towards Thermonuclear Fusion", Nonlinear and Computational Physics Seminar, University of North Texas, Denton, Texas, 2 December 1991.
93. "Spin and the Fifth Dimension", Colloquium, Institute Henri Poincare, Paris, France, 7 January 1992.
94. "Fiber Theory for Tokamaks", Colloquium, FOM Institute for Plasma Physics, Nieuwegein, Holland, 16 January 1992.
95. "Solutions of the Equation $\mathbf{B} \times \text{Curl} \mathbf{B} = \mathbf{0}$ and Force-Free Magnetic Fields", talk given at the *Fifteenth Annual Texas Partial Differential Equations Conference*, Denton, Texas, 7-8 March 1992.
96. "An Overview of the Fusion Program", Colloquium, Energy Systems Research Center, University of Texas at Arlington, 1 May 1992.
97. "The Development of the Fiber Theory of Plasmas", invited talk, *Nineteenth IEEE International Conference on Plasma Science*, Tampa, Florida, 1-3 June 1992.
98. "Current-Carrying Plasmas and the Magnetic Field Ambiguity in Classical MHD Theory", contributed talk, *Nineteenth IEEE International Conference on Plasma Science*, Tampa, Florida, 1-3 June 1992.
99. "Fiber Theory Applied to the Inductive Spherical Pinch", contributed talk, *Nineteenth IEEE International Conference on Plasma Science*, Tampa, Florida, 1-3 June 1992.
100. "Mathematical Structure of Magnetic Fields", Mathematics Seminar, University of Texas at Arlington, Arlington, Texas 17 July 1992.
101. "Mathematical Structure of Magnetic Fields", contributed talk, *American Physical Society 34th Annual Meeting, Division of Plasma Physics*, Seattle, Washington, 16 November 1992.
102. "Fiber Theory and the New Plasma Physics", Physics Colloquium, North Dakota State University, Fargo, North Dakota, 31 March 1993.
103. "Mathematical Structure of Magnetic Fields", Mathematics Colloquium, North Dakota State University, Fargo, North Dakota, 1 April 1993.
104. "Magnetic Confinement in a Tokamak", contributed talk, *International Sherwood Fusion Theory Conference*, Dallas, Texas, 14-16 March 1994.
105. "The Spherical Pinch Program", invited talk, *International Symposium on Current Trends in Fusion Research*, Washington, DC, 14-18 November 1994.
106. "General Background on the Progress of Fusion", presentation to the Science and Engineering Advisory Council, University of Texas at San Antonio, 19 June 1995.

107. "Geometry of the Spherical Pinch", invited paper at the *Second Symposium on Current Trends in International Fusion Research*, Washington DC, 10-14 March 1997.
108. "Quantitative Measures for Mandibular Extraction", presentation to the Division of Plastic Surgery, University of Texas Health Science Center at San Antonio, 21 November 1997.
109. "A Contour Analysis of Mandibular Extraction", talk given at the San Angeles Hospital, Mexico City by V. Zadoo on work done by N. A. Salingaros, J. R. Garza, and V. Zadoo, 12 December 1997.