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Academic Unit:

Faculty of Arts and Sciences
American University of Beirut

Department

Department of Education,
Science and Math Education Center,
and Center for Teaching and Learning

Rank:

- * Assistant Professor of Science Education 1988-2004
- * Associate Professor of Science Education 2005-2000
- * Professor of Science Education 2001-present

Education:

Sept. 1988

- * Doctor of Education in Curriculum and Instruction with emphasis in science education, research, and teacher training at the University of Cincinnati, Cincinnati, Ohio.

May 1988

- * Masters of Education, Curriculum and instruction with an emphasis on science education, University of Cincinnati, Ohio. Courses completed summer 1985, Thesis defended May 1988.

June 1971

- * Bachelor of Science in Biology/Chemistry (group major). American University of Beirut, Lebanon.

Experience:

2016 - Present

- * Associate Dean, Faculty of Arts and Sciences

2009 – Present

- * Director, Center For Teaching and Learning, AUB

2003 –2009

- * Chairperson, Department of Education, American University of Beirut, Beirut, Lebanon

1994 – 2003 &

2009-2012

- * Director, Science and Math Education Center, American University of Beirut, Beirut, Lebanon

2003-2011

- * Consultant, Dhofar University, Dhofar, Sultanate of Oman

2004-2007

- * Consultant, Annibras School, Dubai

2011-2015

- * Professional Development Technical Coordinator, D-RASATI Project (AUB-Funded by USAID). Work involved managing and technical supervision of the development of training materials for science (Biology, chemistry and physics), math, and English trainers for the Lebanese Ministry of Education and Higher Education.

2000-2001

- * Education Advisor, New School Program, Egypt. The New School Program is a research and development project in three Governorates in Egypt. The Program was funded by the USAID and managed by Education Development Center, Inc., Washington, DC.

October 1993 –
Present

- * Department of Education, Faculty of Arts and Sciences, American University of Beirut, Beirut, Lebanon. Responsibilities include

teaching methods and research courses, supervising science student teachers, advising graduate and undergraduate students, supervising research of Master's students, and conducting and publishing research.

- September 1988-1991 and 1992-1993 * Assistant Professor of Science Education, Department of Science Teaching, Syracuse University, Syracuse, New York. Responsibilities include teaching curriculum, methods, and research courses, supervising science student teachers, advising graduate and undergraduate students, supervising research of doctoral students, and conducting and publishing research.
- 1991 – 1992 * Curriculum design Specialist, EDSP Project, Republic of Yemen. The Project was funded by USAID and managed By Education Development Center, INC., Washington, DC.
- 1975 - 1984 * Assistant Principal, St. Joseph School, Cornet Chahwan, Lebanon.
* Chemistry Teacher Grades 11-13, St. Joseph School, Cornet Chahwan, Lebanon.
* Human Biology teacher, Grade 13, St. Joseph School, Cornet Chahwan, Lebanon.
- 1971-1975 * General Science teacher, grades 7-10, St. Joseph School, Cornet Chahwan, Lebanon. Biology teacher, grades 10 & 13, St. Joseph School, Cornet Chahwan, Lebanon.
* Chemistry teacher, grades 10-12, St. Joseph School, Cornet Chahwan, Lebanon.

Courses Taught

- Educ 255 * The Teaching of Science I
Educ 256 * The Teaching of Science II
Educ 263 * Practicum in Teaching Science in Secondary School
Educ 273 * Science for Elementary Teachers I
Educ 274 * Science for Elementary Teachers II
Educ 305 * Foundations of Science Education
Educ 306 * Recent Developments in Science Education
Educ 321 * General Research Methodology in Education
BIOM375 * Principles of Learning and Assessment

Service on Committees

Department committees

- * Curriculum and Examination Committee, Departmental committee, Chair
* Practice Teaching Committee, Departmental committee, Chair

Faculty committees

- * Academic Committee, member
* Advisory Committee, member
* Faculty Teaching Effectiveness Committee, member
* Graduate Program and Research Team of the FAS Strategic Plan, Chair
* Admissions Committee

University committees

- * Accreditation Steering Committee, member

- * Accreditation Task Team on Educational Offerings, co-chair
- * Enrollment Management Committee, chair
- * Interfaculty Committee on the Environment, member
- * Task Force on Promotion Criteria and Procedures, member
- * Task Force on Undergraduate Teaching Excellence, secretary
- * Teaching Award Committee, University committee, member
- * University Learning Outcomes Coordinating Committee, chair
- * University Senate, member
- * Strategic Planning Committee-Goal 1, member
- * Coordinator of the BLOSSOMS ([Blended Learning Open Source Science or Math Studies](#)) Project; a project led by MIT and in which five teams from AUB are involved
- * Board of Graduate Studies, Chair

Professional Activities	
April 2016 –Present	Ruwwad Scholarship Advisory Committee
March 2016-Present	Member of the TWAS Independent Expert Committee (IEC) in Social Sciences
Dec. 2014 – present	* Associate Editor of the Journal for Research in Science Teaching
Oct. 2014-Present	* Member of organizing committee of the “First conference on excellence in math and science teaching: Trends in STEM education” organized by the Excellence Research Center for Science and Math Education of King Saud University, Saudi Arabia.
Oct. 2013- March 2014	* Co-chair of the Science Education strand of the annual conference of the Lebanese Association for the Advancement of Science.
January 2014 – present	* International editorial board member of the International Journal for Research in Education (IJRE)
Nov. 2013-Present	* Advisory Board of the Beni-Suef University International Journal for Human and Social Sciences
September to December 2013	* Member of the selection Committee of the Kuwait Award (http://www.kfas.com/).
May 2013-Present	* Member of the International Advisory Committee for the implementation of Saudi Arabia K-12 Education Reform Strategy, KSA
May 2013-Present	* Member of the Advisory Board of Nibras International School, Dubai.
March 2013-Present	* Member of the Executive Board of the Eurasian Society of Educational Research
February 2013	* Member of the scientific committee of the International Conference on Innovation and Challenges in Education 2013 (CICE2013).
January 2013-present	* Member of the Editorial Advisory Board of the McGill Journal of Education (MJE)
January 2013-Present	* Board member of the International Society of Educational Research (ISER), Turkey.
January 2012-present	* TAKREEM Award Selection Board

January 2012	* Member of the scientific committee of the 9th International Conference on Hands-on Science, Antalya 2012 (Turkey).
2010-2014	* Member of the editorial board of the Journal of Educational and Psychological Studies, College of Education, Sultan Qaboos University.
2011-present	* Member of the editorial board of the International Journal of Biology Education (IJOBED).
2010-Present	* Member of the Board of Trustees of Al Ahliah School, Beirut, Lebanon
2012-2013	* Consultative board of Hariri II and III schools, Beirut, Lebanon.
2010 – 2015	* Executive Committee Member of the Supreme Education Council, State of Qatar.
2010-2011	* Member of the Board of Trustees of Rafic Hariri High School, Saida, Lebanon.
2010- 2014	* Member of the Joint Advisory Board of the National Center for Educator Development, Qatar University, Qatar
2012-2015	* Member of the Editorial Board of the Journal on Excellence on College Teaching, Miami University, Ohio, USA
2009-present	* Member of the Editorial Board of the International Journal of Science and Math Education
2008-Present	* Member of the Editorial Board of the Eurasia Journal of Physics and Chemistry Education, Turkey.
2008-present	* Member of the Editorial Board of International Journal of Environmental and Science Education (IJESE), Turkey.
1995-2009 and 2012 - present	* Member of the Editorial Board of the Journal of Science Teacher Education.
2005 – present	* Member of the editorial board of the Eurasia Journal of Math, Science, and Technology Education.
2005-2007	* Member of the editorial board of the Electronic Journal of Science Education
2004-2007	* Member of the executive board of the National Association for Research in Science Teaching (NARST), USA.
2004-Present	* Consulting Editor for International Review of Education, Edited by the UNESCO Institute for Education, Hamburg, Germany
2004-2008	* International Coordinator and Chair of the International Committee, National Association for Research in Science Teaching (NARST), USA.
2003-2012	* Contributing International Editor, Science Education, USA.
2003 – 2009 and 2012-present	* Board of Governors, Brummana High School, Brummana, Lebanon.
2003-2011	* Consultant to Dhofar University (Through an AUB Project)
2003-2007	* Consultant to Annibras International School, Dubai (Through an AUB Project)
2001-2008 and 2014-present	* Member International Committee of the National Association for Research in Science Teaching.
1996-Present	* Chair or Co-Chair of the Organizing Committee of the Science

	and Math Teachers' Conference organized by the Science and Math Education Center, American University of Beirut.
1995- present	* Reviewer for Journal of Science Teacher Education, Journal of Research in Science Teaching, School Science and Mathematics Journal, Science Education, Electronic Journal of Science Education, Electronic Journal of Literacy Through Science, Acta Chimica Slovenica, and Science books and films.
1993-Present	* Consultant for a number of Lebanese, Jordanian, Omani, Saudi, and Egyptian schools in science curriculum and teaching methodology.
1985-present	* Member in the following associations in the USA: National Association for Research in Science Teaching, National Science Teachers Associations, School Science and Mathematics Association, Association for Science Teacher Education, and American Educational Research Association.
2003-Present	* Member of the European Science Education Research Association.
2000-present	* Member of the Lebanese Association for Educational Studies, Lebanon
2002 – 2004	* NARST Strand 8 (History, Philosophy, and Epistemology) Co-coordinator.
2000 – 2001	* Member of the scientific committee of First IOSTE Symposium in Southern Europe on Science and technology education: Preparing future citizens to be held in Paralimni, Cyprus, between April 18 and 21, 2001.
2000 – 2003	* Member of the NARST Outstanding Master's Award Committee and Member of the NARST Elections Committee
1999 – 2002	* Consultant for Kingdom Schools Project, Saudi Arabia, a Project managed by the American University of Beirut
1995 – 2000	* Editor, SMEC NEWSLETTER a publication of the Science and Math Education Center, American University of Beirut, Beirut, Lebanon.
1996 – 1998	* Member of the Higher Science Curriculum Committee and of the Chemistry and Scientific Literacy Committees
1995 – 2000	* Member of the Editorial Board of the Journal of Research in Science Teaching.
2001 – 2002	* Member of the Promotion Procedures Task Force, American University of Beirut
2001 – 2003	* Member of the Accreditation Task Force, American University of Beirut
2001 – 2004	* Co-coordinator of Teaching Effectiveness Initiative, American University of Beirut

Work with Doctoral students

Supervisor of PhD Dissertation

Advisor	Co-Advisor	PhD Candidate	University	Title of Dissertation	Year Passed/In
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					progress
Saouma BouJaoude		Enja Osman	Lebanese University	Using Learning Progressions to enhance Lebanese Students' Understanding of Complex Genetic Concepts	Passed June 2014
Saouma BouJaoude	Daniel Favre	Fadi-El Hage	Université de Montpellier II	The compartmentalization of knowledge in physiology: From official documents to remediation (Integration of the complexity paradigm in studying the construction of links between different concepts taught in physiology at the level of teaching practices and students' productions)	2005
Saouma BouJaoude & Daniel Favre	Daniel Favre & Fadi Hage	Reine Khoury	Université Saint Joseph	Etude de l'impact des conceptions des enseignants universitaires de science relatives à la science et à son enseignement sur leurs pratiques pédagogiques en classe et sur les conceptions de leurs étudiants relatives à la science	Passed July 2015

External Examiner on PhD Dissertations

Advisor	External Examiner	PhD Candidate	University	Title of Dissertation	Year Passed/In progress
Iman Khalil	Saouma BouJaoude	Hanin Fuddah	Lebanese University	Health Education at schools in Lebanon. Critical analyses of curriculum, textbooks, focus groups and classroom sequences in a Lebanese public school and a Palestinian school	December 2014
Zalpa Ayoubi	Saouma BouJaoude	Mazen Kotob	Lebanese University	The impact of chemistry teachers' beliefs and principals' leadership style on constructivist classroom practices	September 2014
Marc Weisser	Saouma BouJaoude	Dalal Moukarzel	Université de Haute Alsace	La Formation Continue des Enseignants des Écoles Indépendantes au Qatar - Étude de cas	May 2011
Andree Tiberghien	Saouma BouJaoude	Layal Malkoun	Université De Lyon	De la caractérisation de pratiques de classes de physique a leur relation aux performances des élèves: étude de cas en France et au Liban.	August 2007
Pierre Clément	Saouma BouJaoude	Assaad Yammine	Université De Lyon	L'Éducation a la sexualité humaine au Liban: avancées et difficultés.	June 2011
David Treagust	Saouma BouJaoude	Donna Lewis	Curtin University of Technology, Australia	The effects of cooperative learning in fifth grade physical science classes on student achievement, attitude and perception of the laboratory environment and conceptual change	September 2007
Daoud El	Saouma	Khalid Khan	University	The effect of using a science	January

Hidabi	BouJaoude		of Science and Technology, Yemen	technology society approach on student achievement in science	2005
Luc Trouche and Mazen Elkhatab	Saouma BouJaoude	Rim Hammoud	Université De Lyon	Le travail collectif des professeurs en chimie comme levier pour la mise en œuvre de démarches d'investigation et le développement des connaissances professionnelles. Contribution au développement de l'approche documentaire du didactique	May 2013
Jean-François Le Maréchal	Saouma BouJaoude	Rita Khanfour	Université De Lyon	Structuration par le professeur des connaissances construites par des élèves ayan travaille en autonomie lors d'une activité expérimentale de chimie.	November 2008
Muhammad Darwishe	Saouma BouJaoude	Ahmad Al-Maashani	Cairo University	برنامج تدريبي لتقنيات البرمجة اللغوية دراسة لبعض متغيرات NLP العصبية الشخصية لدى طلبة الجامعة بسلطنة عُمان	January 2006

Honors

- Received the *Academy of Science for the Developing World-Arab Regional Office (TWAS_ARO)* regional Prize for the development of educational material and school science curricula, 2008.
- Received the Excellence in the Field of Education Award – from the Takreem Arab Achievement Awards, March 2010.
- Elected fellow of the Academy of Science for the Developing World (TWAS - <http://twas.ictp.it/>), October 19, 2010.
- Received the Abdul Hamid Al Hallab REP Service excellence Award, January 2012.

Publications

Articles:

- Fowler, S., & BouJaoude, S. (1987). Using hierarchical concept / proposition maps to plan instruction that addresses existing and potential student misunderstandings in science. In Novak, J. (Ed.). *Proceedings of the Second International Seminar on Misconceptions and Educational Strategies in Science and Mathematics, Volume I* (pp. 182 - 186), Ithaca, NY: Cornell University, Department of Education.
- BouJaoude, S. (1989). *Problem solving in science*. Cincinnati: Science Education Faculty of the Department of Curriculum and Instruction, School of Education, University of Cincinnati¹.
- BouJaoude, S. (1991). A study of the nature of students' understandings about the concept of burning. *Journal of Research in Science Teaching*, 28, 689-704.
- BouJaoude, S. (1992). The relationship between students' learning strategies and the change in their misunderstandings during a high school chemistry course. *Journal of Research in Science Teaching*, 29, 687-699.
- BouJaoude, S. (1994b). Helping middle school pre-service teachers to address students' alternative conceptions. In L. Schafer (Ed.) *Behind the methods door: Educating elementary and middle school science teachers* (pp. 133-143). Columbus, OH:

¹This monograph is based on the Author's Master's Thesis presented to the Department of Curriculum and Instruction, College of Education, University of Cincinnati.

- Association for the Education of Teachers in Science and ERIC Clearinghouse for Science and Mathematics.
- BouJaoude, S. & Giuliano, F. (1994). Relationships between achievement and selective variables in a chemistry course for nonmajors. *School Science and Mathematics Journal*, 96, 296-302.
- BouJaoude, S. (1995). *Environmental studies in the Lebanese curriculum* (PP. 49- 60). Capacity building and environmental development in Lebanon (Political & Civic Studies series, issue 1). Beirut: Fondation Rene Moawad & Friedrich-Naumann-Stiftung Foundation (in Arabic).
- BouJaoude, S. (1995, April). Making sense of the nature of science through physical science demonstrations. *The Science Teacher*, 46-49.
- Dagher, Z. & BouJaoude, S (1996). Tailoring science education graduate programs to the needs of all students (a commentary). *Science Education*, 80, 89-91.
- BouJaoude, S. (1996). Why an issue on science education? (Editorial). *SciQuest*, 6 (1), 4-5.
- Abd-El-Khalick, F. & BouJaoude, S. (1996). An exploratory study of the pedagogical content knowledge of science teachers. *Proceedings of the Oregon Academy of Science*, 32, 57-58.
- Abd-El Khalick, F. & BouJaoude, S. (1997). An exploratory study of the knowledge base for science teaching. *Journal of Research in Science Teaching*, 34, 673-699.
- Dagher, Z., & BouJaoude, S. (1997). Scientific views and religious beliefs of college students: the case of biological evolution. *Journal of Research in Science Teaching*, 34, 429-455.
- BouJaoude, S. (1997). *Contemporary conceptions of the philosophy of science, learning, and teaching and their implications for science education*. In The new trends and strategies in science education. Monograph published by the Lebanese Association for Education Studies. Beirut: Lebanon. (in Arabic).
- BouJaoude, S. (1999). *Lebanese teachers and students' perceptions of the nature of science*. In Debs, M. (ED.). *Proceedings of the Second Scientific Conference on the Future of Science and Mathematics teaching and the needs of the Arab society*, Tunisia, Tunis, 19-22 December, 1996 (pp. 283-293). Beirut, Lebanon: Arab development Institute.
- BouJaoude, S. (1999). Environmental education in Lebanese schools, *SciQuest*, 7, 19-21.
- BouJaoude, S. (2000). *Trends in science teacher preparation*. In the Proceedings of the conference on Science Teaching: Content, Pedagogy, and Evaluation (L'enseignemnet des sciences: Contenu, didactique et evaluation) organized by the Center for Educational Research and Development and L'Institut Libanais d'Educateurs de l'Universite Saint Joseph (pp. 24-31). April 17-18, 2000.
- BouJaoude, S. & Sayah, F. (2000). *Teaching science in Arabic: Directions and future prospects*. In Language and Education in Lebanon, Edited by K. Shaaban and G. Ghaith (pp. 145-169). Beirut, Lebanon: The Lebanese Association for Educational Studies (In Arabic).
- BouJaoude, S. (2000). Conceptions of Science Teaching Revealed by Metaphors and by Answers to Open-Ended Questions. *The Journal of Science Teacher Education*, 11, 173-186.
- BouJaoude, S. (2000). What might happen if . . .?: Students use the futures wheel to analyze science-related social issues. *The Science Teacher*, 67, 45-47.
- BouJaoude, S. & Barakat, H. (2000). Secondary school students' difficulties in stoichiometry. *School Science Review*, 81, 91-98.
- BouJaoude, S. & Tamim, R. (2000) Analogies generated by middle-school science students: types and usefulness. *School Science Review*, 82(299), 57-63.

- BouJaoude, S. (2000). Science teacher preparation in Lebanon: Reality and future directions (pp. 45-74). In S. Abell (Ed.), *Science teacher education: An international perspective*. Dordrecht: Kluwer.
- BouJaoude, S. (2001). The Status of Elementary Science Education in Lebanon. *Science Education International*, 12, 7-9.
- BouJaoude, S. (2001). Conceptual Change in Two Middle School Science Students During Instruction about the Concept of Burning. *Journal of Educational and Psychological Sciences*, 2, 8-31.
- BouJaoude, S. (2001). *Developing science curricula to meet the challenges of the future*. In El-Komos et al. (Eds.) Proceedings of the symposium on new curriculum for a changing world (pp. 98-118). Manama: University of Bahrain, College of Education.
- BouJaoude, S. (2002). Balance of scientific literacy themes in science curricula: The Case of Lebanon. *International Journal of Science Education*, 24, 139-156.
- BouJaoude, S. (2002). *Developing basic and secondary education in the Arab world to encompass advances in science* (223-250). In A. Abulhaija (Ed.). *Science and Technology in the Arab World*. Amman: Shouman Association.
- Haidar, M., Abdel-Khalick, F., BouJaoude, S. (2003). Lebanese Secondary School Students' Environmental Knowledge and Attitudes. *Environmental Education Research*, 9, 21-33.
- BouJaoude, S. (2003). *Science and Technology in Schools of the Twenty-First Century*. In Jenkins, E. (ed.). *Innovations in science and technology education, Volume VIII* (pp. 43-68). Paris: UNESCO.²
- Abd-El-Khalick, F. & BouJaoude, S. (2003). Lebanese Students' Views of Nature of Science, *Mediterranean Journal of Educational Studies*, 8, 61-79.
- BouJaoude, S. (2003). *Scientific Literacy in the Lebanese curriculum*³. Proceedings of the conference "3e Millenaire: Quelle education pour quelle jeunesse (Third millennium: What education for what youth?). Kaslik, Lebanon: University of Holy Spirit, Kaslik. (A version of this paper appeared in the *International Journal of Science Education*, 24, 139-156.)
- BouJaoude, S. & Barakat, H. (2003). Students' Problem Solving Strategies in Stoichiometry and their Relationships to Conceptual Understanding and Learning Approaches. *Electronic Journal of Science Education*, 7, March 2003. <http://unr.edu/homepage/crowther/ejse/ejsev7n3.html>
- BouJaoude, S., Salloum, S., & Abd-El Khalick, F. (2004). Relationships between selective cognitive variables and students' ability to solve chemistry problems. *International Journal of Science Education*, 26, 63-84.
- BouJaoude, S., & Abd-El-Khalick, F. (2004). *A Decade of Science Education Research in Lebanon (1992-2002): Trends and Issues* in Mutua, K & Sunal, C. S. (Eds.) (203-241). *Research on Education in Africa, the Caribbean, and the Middle East, Volume 1*. Greenwich CT: Info Age Press.
- Abd-El-Khalick, F., BouJaoude, S., Duschl, R. A., Hofstein, A., Lederman, N. G., Mamlok, R., Niaz, M., Treagust, D., & Tuan, H. (2004). Inquiry in Science Education: International Perspectives. *Science Education*, 88, 397-419.
- BouJaoude, S., & Youssef, R. (2004). The Effect of Teaching an Environmentally Oriented Science Unit on Students' Attitude and Achievement. *Science Education International*, 15, 63-78.

² An abridged version of this article appeared in "Connect" (UNESCO International Science, Technology and Environmental Education Newsletter), VOL. XXVIII, No. 3-4, 2003.

³ A version of the paper appeared in English in the *International Journal of Science Education*

- BouJaoude, S. (2005). Using electronic and information technologies in science teacher preparation: The experience of a teacher educator. In W. Haddad (Ed.), *Technologies for education for all: Possibilities and prospects in the Arab region* (23-28). Washington, DC.: Academy for Educational Development.
- Dagher, Z., & BouJaoude, S. (2005). Students' perceptions of the nature of evolutionary theory. *Science Education*, 89, 378-391.
- BouJaoude, S., Sowwan, S., & Abd-El-Khalick, F. (2005). *The effect of using drama in science teaching on students' conceptions of nature of science*. In Research and the Quality of Science Education, Boersma, K.; Goedhart, M.; de Jong, O.; Eijkelhof, H. (Eds.)(pp. 259-2670. Netherlands: Springer.
- BouJaoude, S. (2005). Improving Science Teaching Methodology at the University Level: Synchronizing the Teaching Approaches at the Secondary and University Levels. In UNESCO National Committee (Ed.), *Proceedings of the international conference on teaching science at the University level* (112-130). Beirut, Lebanon: UNESCO National Committee.
- BouJaoude, S., & Ghaith, G. (2006). *Educational Reform at a Time of Change: The Case of Lebanon in Education Reconstruction in Transitional Societies*, in Ernest, J. & Treagust, D., (Eds.) (pp. 193-210). Netherlands: Sense Publishers.
- Ayoubi, Z. & BouJaoude, S. (2006). A Profile of Pre-College Chemistry Teaching in Beirut. *Eurasia Journal of Mathematics, Science and Technology Education*, 2 (3), 124-143. (Available at <http://www.ejmste.com>.)
- BouJaoude, S. & Santourian, G. (2007). Making the moment of inertia accessible to students. *School Science Review*, 88 (324), 21-25.
- BouJaoude, S. (2007). Enhancing Students' Ability to Learn Meaningfully in Science. *Melange: Revue Culturelle de Secrétariat General des Ecoles Catholique aux Liban*, 1 (May – June), 52-69.
- BouJaoude, S. (2007). *Twenty-first century educational skills for development in the Mediterranean: Quality and curriculum relevance* (pp. 82-89). In Med. 2007: 2006 in the Euro-Mediterranean Space. Barcelona, Spain: European Institute of the Mediterranean (IEMed).
- Jurdak M., BouJaoude S. & Ghumrawi N. (2007). Comparison of mathematization in microcomputer based laboratory (MBL) and verification – Type laboratory (VTL) in physics. In Pitta-Pantazi, P. & Philippou, G. (Editors), *Proceedings of the Fifth Congress of the European Society for Research in Mathematics Education*, pp. 2110-2119. Larnaka, Cyprus: European Society for Research in Mathematics Education and Department of Education, University of Cyprus.
- Salloum, S. & BouJaoude, S. (2008). Careful! It is H₂O: Teachers' Conceptions of Chemicals. *International Journal of Science Education*, 30, 33-64.
- Hokayem, H. & BouJaoude, S. (2008). College students' perception of the theory of evolution. *Journal of Research in Science Teaching*, 45, 395 – 419.
- Hokayem, H. & BouJaoude, S. (2008). How College students in Lebanon perceive the theory of evolution. *The Science Education Review*, 7 (2), 53-56.
- Daoud, T. & BouJaoude, S. (2008). *The Effect of Vee Heuristic on Students' Meaningful Learning in Physics Grade 10 Laboratories* in The Impact of the Laboratory and Technology on Learning and Teaching (pp. 167-200). Charlotte, NC: Information Age Publishing.
- BouJaoude, S. & Tamim, R. (2008). Middle school students' perceptions of the instructional value of analogies, summaries and answering questions in life science. *The Science Educator*, 17, 72-82.

- BouJaoude, S. & Attieh, M. (2008). The Effect of using Concept Maps as Study Tools on Achievement in Chemistry. *Eurasia Journal of Mathematics, Science and Technology Education*, 4, 233-246.
- Jurdak, M. & BouJaoude, S. (2009). [Country case study: Lebanon](#). In B. Vlaardingerbroek & N. Taylor (Eds.), [Secondary school external examination systems - reliability, robustness and resilience](#) (pp. 153-165). New York: [Cambria Press](#).
- BouJaoude, S. & Dagher, Z. (2009). Introduction: Science education in Arab states. In S. BouJaoude & Z. Dagher (Eds.), *The world of science education: Arab states* (pp. 1-8). Rotterdam, The Netherlands: Sense Publishers.
- Dagher, Z. R. & BouJaoude, S. (2009). Challenges and opportunities for science education in the Arab region. In S. BouJaoude & Z. Dagher (Eds.), *The world of science education: Arab states* (pp. 265-277). Rotterdam, The Netherlands: Sense Publishers.
- BouJaoude, S., Abd-El-Khalick, F., & El-Hage, F. (2009). Science Education research in Lebanon (2003–2008): Trends and issues. In S. BouJaoude & Z. Dagher (Eds.), *The world of science education: Arab states* (pp. 223-255). Rotterdam: The Netherlands: Sense Publishers.
- BouJaoude, S. & Al-Mouhayar (2010). Teacher education in Lebanon: Trends and issues (Vol. II). In K. Karras & C. C. Wolhuter (Eds.), [International Handbook of Teacher Education World-wide](#) (pp. 309 – 332). Athens: Astrapos Editions.
- BouJaoude, S., & Jurdak, M. (2010). Integrating physics and math through microcomputer based laboratories (MBL): effects on discourse type, quality, and mathematization. *International Journal of Science and Mathematics Education*. 8 (6), 1119-1047.
- Yacoubian, H. & BouJaoude, S. (2010). The effect of reflective discussions following inquiry-based laboratory activities on students' views of nature of science. *Journal of Research in Science Teaching*, 47, 1229–1252.
- Pongsophon, P., Yutakom, N. & BouJaoude, S.B. (2010). Promotion of scientific literacy on global warming by process drama. *Asia-Pacific Forum on Science Learning and Teaching*, 11(1): Article 4. Retrieved from <http://www.ied.edu.hk/apfslt>
- BouJaoude, S., Asghar, A., Wiles, J. R., Jaber, L., Saredidine, D., and Alters, B. (2011). Biology professors' and teachers' positions regarding biological evolution and evolution education in a Middle Eastern society. *International Journal of Science Education*, 33, 979-1000.
- Dagher, Z. & BouJaoude, S. (2011). Science education in Arab states: Bright future or status quo? *Studies in Science Education*, 47, 73 — 101.
- BouJaoude, S., Wiles, J. Asghar, A., & Alters, B. (2011). Muslim Egyptian and Lebanese students' conceptions of biological evolution. *Science and Education*, 20, 895-915.
- Saad, R. & BouJaoude, S. (2012). The Relationship between teachers' knowledge and beliefs about science and inquiry and their classroom practices. *Eurasia Journal of Mathematics, Science & Technology Education*, 8(2), 73-88.
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BouJaoude, S. (2011). Review of the book "Elsbeth Page and Jyotsna Jha (2009). *Exploring the bias: Gender and stereotyping in secondary schools*. Commonwealth Secretariat, London. *International Review of Education*, 57, 227-229.

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BouJaoude, S. (1994a). *Students' systematic errors when solving kinetic and chemical equilibrium problems*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Atlanta, GA., April 15-19, 1993 (ERIC Document Reproduction Service No. ED 361 196).

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- Association for Research in Science Teaching, San Francisco, Ca., April 3-5. (ERIC Document Reproduction Service No. ED 394848).
- Abd-El-Khalick F, & BouJaoude, S. (1997). *An exploratory study of the disciplinary knowledge of science teachers*. I. P. Rubba, P. Keig, & J. Reys (Eds.), Proceedings of the 1997 Annual International Conference of the Association for the Education of Science Teachers (pp. 89-133). Pensacola, FL: Association for the Education of Teachers in science (ERIC Document Reproduction Service NO. ED 405 220).
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- BouJaoude, S. (1987). Emerging trends from a decade of science education research, 1976-1986. *Science Education Information Report, abstracts of presented papers at the annual conference of the National Association of Research in Science Teaching* (P. 139). Columbus, OH: The ERIC Science, Mathematics, and Environmental Education Clearinghouse.
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- Osman, E & BouJaoude, S. (2016). Learning progressions to enhance students' understanding of genetics. In J. Lavonen, K. Juuti, J. Lampiselkä, A. Uitto & K. Hahl (Eds.), *Electronic Proceedings of the ESERA 2015 Conference. Science education research: Engaging learners for a sustainable future, Part 1, Strand 1* (Odilla Finlayson & Roser Pinto, co-ed.), (pp. 3-10). Helsinki, Finland: University of Helsinki. ISBN 978-951-51-1541-6.
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Research Grants

- BouJaoude, S. (2007) (Principal investigator in Lebanon). Theistic, Agnostic, and atheistic notions of biological evolution in Islamic societies: exploring Muslim teachers', students', and parents' understanding of evolution (\$6000.00). Research grant in collaboration with McGill University.
- BouJaoude, S., & Jurdak, M., & Karami, R. (2007-2015) (Co-Principal Investigators). *From research to practice: making a difference in the classroom*, a three year (\$750,000.00) research grant in Lebanon, Jordan, and Saudi Arabia. This grant was renewed in 2011 for 4 years for the amount of \$1,000,000.00 (4 years) and in 2015 for the amount of \$600,000.00 (three years).
- BouJaoude, S. (2009). Received a 108,000 Euro grant to investigate Science and Society issues grant from European Commission in collaboration with Exeter University, UK. The grant will be inaugurated in January 2010.

- BouJaoude, S., Jurdak, M., & Karami, R. (2010). *From research to practice: making a difference in the classroom (Part II)*, a four year (\$1,000,000.00) research grant in Lebanon, Jordan, and Saudi Arabia, Bahrain, Oman, and Qatar.
- BouJaoude, S. (2002-2011). Received a yearly grant of \$5000.00 from UNESCO to support the publication of Science and Math Education Center Conference Proceedings.
- BouJaoude, S. (2011). Received a \$4000.00 from UNESCO Regional Office for the Arab States for CTL Conference.
- Ghaith, G. & BouJaoude, S. [co-principal investigator] (2012). Received an 85,366.54 Euros Tempus Project 530614-TEMPUS-1-2012-1-EG-TEMPUS-JPHES, for “Capacity Development of Faculties of Education in International approaches to teacher education (CDFE).
- BouJaoude, S., & Karami, R. (2015). *From research to practice: making a difference in the classroom (Part II)*, a four year (\$600,000) research grant in Lebanon, Jordan, and Saudi Arabia, Bahrain, Oman, and Qatar.
- Karami, R. & BouJaoude, S. (2015). Toward an Educational Reform Movement in the Arab World: TAMAM’s Lebanon Hub. Grant of \$600,000.00 from the LORE Foundation.

Presentations and Panels

- April 2016 Using the Complexity Paradigm to Help Students Construct Meaningful Links among Biology Concepts (With Fadi El Hage). Paper presented at the annual conference of the National Association for Research in Science Teaching, Baltimore, USA, April 14-18, 2016.
- April 2016 The Pedagogical Content Knowledge of Pollution Held by Secondary Chemistry Teachers in Country (With Farah El Chamaa). Paper presented at the annual conference of the National Association for Research in Science Teaching, Baltimore, USA, April 14-18, 2016.
- April 2016 The Portrayal of Nature of Science in Lebanese Middle School Science Textbooks (With Zoubeida Dagher). Paper presented at the annual conference of the National Association for Research in Science Teaching, Baltimore, USA, April 14-18, 2016.
- April 2016 Science Education in Complex Multilingual Contexts: Challenges and Insights from the Mediterranean and MENA (Middle East and North Africa) Regions (With Sara Salloum). Paper presented at the annual conference of the National Association for Research in Science Teaching, Baltimore, USA, April 14-18, 2016.
- April 2016 Symposium on Promoting Cross-Culture Science Education Research organized at the annual conference of the National Association for Research in Science Teaching, Baltimore, USA, April 14-18, 2016.
- March 2016 K-12 STEM Education: History, significance, and effective teaching approaches. Presentation at a conference on 21st century skills through STEM Education organized by the Beirut Al Makassed Philanthropic Organization, Beirut, March 17, 2016.
- March 2016 What Kind of Citizen do we Hope our Students can be? Presentation at the seminar on rethinking education for citizenship. Haigazian University, Beirut, March 17, 2016.
- December 2015 Is multicultural education possible in Lebanon? Presentation at the seminar entitled ‘croisement interculturel en communication, éducation, Economie et Art’ at the Antonin University, Baadba, Lebanon, December 8, 2015.

- October 2015 Scientific Practices: Implications for the science classroom. Workshop conducted by Z. Dagher, S. Erduran, E. Kaya and S. BouJaoude at the American University of Beirut, Beirut, Lebanon, October 30 and 31, 2015.
- October 2015 Educational implications of cross-cultural studies on the relationships between conceptions of the theory of evolution and religious affiliation. Paper presented at the workshop on Science Teaching in Contemporary Islamic Societies, October 22-24, 2015, McGill University, Montreal, Canada.
- August 2015 BouJaoude, S. History of evolutionary science and its education in the Arab world. Paper presented at the Biennial Conference of the European Science Education Research Association, Helsinki, Finland, August 31 – September 4, 2015.
- August 2015 Osman, E. & BouJaoude, S. Learning progressions to enhance students' understanding of genetics. Paper presented at the Biennial Conference of the European Science Education Research Association, Helsinki, Finland, August 31 – September 4, 2015.
- August 2015 Hamdan, H., Osman, E. & BouJaoude, S. Identifying misconceptions and difficulties to design a learning progression in genetics. Paper presented at the Biennial Conference of the European Science Education Research Association, Helsinki, Finland, August 31 – September 4, 2015.
- May 2015 Mohammed Estaiteyeh & Saouma BouJaoude (2015). *Differentiating Instruction in Biology for the Genetics Unit in Secondary Classes*. Paper presented at the National Conference on Education 2015: Adapting Education to a Changing Arab Region held at Notre Dame University, Lebanon, May 16, 2015.
- May 2015 Sara Salloum & Saouma BouJaoude (2015). *Triadic Dialogue in the Science Classroom: Bilingual Science Teaching and Learning in Test-Driven Environments*. Paper presented at the National Conference on Education 2015: Adapting Education to a Changing Arab Region held at Notre Dame University, Lebanon, May 16, 2015.
- May 2015 BouJaoude, S. (2015). *K-12 STEM Education: History, significance and effective teaching approaches*. Keynote address presented at the “First Excellence Conference in Science and Mathematics Education: STEM-2015”, Riyadh, Saudi Arabia, May 5-7.
- May 2015 BouJaoude, S. (2015). *Action research for improving mathematics and science achievement*. Workshop presented at the “First Excellence Conference in Science and Mathematics Education: STEM-2015”, Riyadh, Saudi Arabia, May 5-7.
- April 2015 BouJaoude, S. *The PROGRESS Scale: an instrument to measure teacher classroom performance*. Paper presented at the panel on Teacher Preparation and Development at the All for Education Conference organized by the Lebanese Ministry of Education and Higher Education, April 21 and 22, 2015.
- April 2015 El-Khoury, R., BouJaoude, S., Favre, D., El-Hage Fadi. *L'enseignement des aspects de la nature de la science à l'université* paper presented at the 21th LAAS International Science Conference (LAAS'15), Beirut Lebanon, April 15-17, 2015.
- April 2015 BouJaoude, S., Hsiao-Lin Tuan, Ling Liang, Sarah Barrett, Julia V. Clark, Hsiao-Lan Sharon Chen, Mauricio Pietrocola, and Peter A. Okebukola.

- Developing international cross-cultural research projects on science education.* Workshop presented at the annual conference of the National Association for Research in Science Teaching, April 11-14, 2015.
- April 2015 Halwany, S. & BouJaoude, S. *Comparative study of students' epistemological beliefs about biology, chemistry and physics.* Paper presented at the annual conference of the National Association for Research in Science Teaching, April 11-14, 2015.
- April 2015 Khishfe, R., Alshaya, F., BouJaoude, S., & Mansour, N. *Nature of science views and argumentation skills in the context of socio-Scientific issues.* Paper presented at the annual conference of the National Association for Research in Science Teaching, April 11-14, 2015.
- April 2015 BouJaoude, S. *The science education for diversity project: An international collaborative research project.* Paper presented at the annual conference of the National Association for Research in Science Teaching, April 11-14, 2015.
- April 2015 Radwan, N., & BouJaoude, S. *Reading problems faced by students studying science in a foreign language.* Poster presented at the annual conference of the National Association for Research in Science Teaching, April 11-14, 2015.
- April 2015 BouJaoude, S. *Christian and Muslim Teachers and Students' Views of the Theory of Evolution: Implications for Science Education.* Invited lecture presented at the College of Education of the University of Illinois, Urbana-Champaign, USA, April 10, 2015.
- April 2015 BouJaoude, S. *Structural and conceptual foundations of teacher education programs in selected universities in Lebanon.* Panel organized at the College of Education, Urbana-Champaign, USA, April 9, 2015.
- November 2014 BouJaoude, A. *Inquiry teaching for more effective learning.* Presentation and workshop at the Lilly International Conference on College Teaching, Oxford, Ohio, USA, November 20-23, 2014.
- April 2014 BouJaoude, S., Khishfe, R., & Alameh, S. *Changes in teachers' classroom practices and students' perceptions of science resulting from participating in continuous professional development program.* Paper presented at the annual conference of the National Association for Research in Science Teaching, Pittsburgh, Pennsylvania, March 30 – April 2.
- April 2014 Alameh, S. & BouJaoude, S. *The impact of using computers as cognitive tools on grade 10 Lebanese students' attitudes and conceptual understanding in physics.* Paper presented at the annual conference of the National Association for Research in Science Teaching, Pittsburgh, Pennsylvania, March 30 – April 2.
- April 2014 Osman, E., & BouJaoude, S. *Using learning progressions to enhance Lebanese students' understanding of complex genetic concepts.* Paper presented at the annual conference of the National Association for Research in Science Teaching, Pittsburgh, Pennsylvania, March 30 – April 2.
- April 2014 Salloum, S. & BouJaoude, S. *The use of triadic dialogue in the science classroom: bilingual science teaching and learning in test-driven environments.* Paper presented in a symposium on Science Teaching-- Middle and High School (Grades 5-12): Characteristics and Strategies

- held at the annual conference of the National Association for Research in Science Teaching, Pittsburgh, Pennsylvania, March 30 – April 2.
- March 2014 Khoury, R., BouJaoude, S. Favre, D, & El Hage. *Étude de la relation entre les conceptions des enseignants universitaires de sciences concernant la science, leurs pratiques pédagogiques en classe et les conceptions de leurs étudiants concernant la science: Une approche méthodologique mixte*. Paper presented at the 20th International Science Conference of the Lebanese Association for the Advancement of Science. Beirut, March 27-29, 2014.
- March 2014 BouJaoude, S. *Promoting and supporting high quality teaching and learning at AUB*. Presentation at the lecture series of the Lebanese Association for Educational Studies. Beirut, March 7, 2014.
- February 2014 BouJaoude, S. (2014). *Relationship between religious affiliation and acceptance of biological evolution in Lebanon and Egypt*. Lecture presented at a forum organized by the Association for the Study of Mind (ASOM) and the Education Forum at AUB. Beirut, February 10, 2014.
- February 2014 BouJaoude, S. (2014). *Promoting and sharing research: Challenges for Middle East researchers and educators*. Keynote presented at the conference on Building Academic Research Capacity organized by the Institute of International Education. Erbil, Iraq, February 3-5, 2014.
- December 2013 BouJaoude, S. (2013). *Science Education in the Arab Countries at the pre-college level: Current Status and future prospects*. Paper presented at the 9th annual conference of TWAS ARO on Science & Technology for Sustainable Development in the Arab Region. Alexandria, Egypt, December 29-30, 2013.
- Nov. 2013 BouJaoude, S. (2013). *Christian and Muslim Teachers and Students' Views of the Theory of Evolution: Implications for Science and Higher Education*. Keynote address presented at the 33rd Annual Lilly Conference on College Teaching. Oxford, Ohio, November 21-24, 2013.
- Nov. 2013 BouJaoude, S. & BouZeineddine, A. (2013). *Faculty Members' and Department Chairs' Perceptions about the Program Learning Assessment Process: The Case of the American University of Beirut*. Paper presented at the 33rd Annual Lilly Conference on College Teaching. Oxford, Ohio, November 21-24, 2013.
- Sept. 2013 BouJaoude, S., Khishfe, R., & Alameh, S. (2013). Effect of a PD program on teachers' classroom practices and students' perceptions. Paper presented at the Biennial Conference of the European Science Education Research Association, Nicosia, Cyprus, Sept. 2-7, 2013.
- Sept. 2013 Radwan, N. & BouJaoude, S. (2013). Reading to learn from science textbooks: Problems faced by students studying science in a foreign language. Poster presented at the Biennial Conference of the European Science Education Research Association, Nicosia, Cyprus, Sept. 2-7, 2013.
- Sept. 2013 Khishfe, R., BouJaoude, S. & Alameh, S. (2013). Examining relationships among Lebanese students' conceptions of and attitudes toward science, career choices, religious affiliations and gender. Paper presented at the Biennial Conference of the European Science Education Research Association, Nicosia, Cyprus, Sept. 2-7, 2013.
- April 2013 Shehab, S. & BouJaoude, S. (2013). *Analysis of the chemical representations in secondary Lebanese chemistry textbooks*. Paper

- presented at the annual conference of the National Association for Research in Science Teaching, Puerto Rico, April 6-9, 2013.
- April 2013 Khishfe, R. & BouJaoude, S. (2013). *Examining relationships among Lebanese students' conceptions of and attitudes toward science, career choices, religious affiliations and gender*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Puerto Rico, April 6-9, 2013.
- April 2013 Salloum, S., Dani, D., BouJaoude, S., Khishfe, R., Wahbeh, N, Shamrani, S. & Nasser, M. (2013). *Teachers' views of 21st century content themes, skills, and contexts: An international perspective*. Symposium presented at the annual conference of the National Association for Research in Science Teaching, Puerto Rico, April 6-9, 2013.
- February 2013 BouJaoude, S. & Khishfe, R. *Science Education for Diversity (SED) Project: Preliminary results*. Paper presented at a meeting of the Lebanese Association for Educational Studies, Beirut, Lebanon.
- December 2012 BouJaoude, S. (2012). *Education for sustainable development: Interactions of science, technology, society and environment*. Paper presented at the TWAS-ARO Annual meeting, Alexandria, Egypt.
- December 2012 BouJaoude, S. (2012, December). *Promoting and supporting high quality teaching and learning at AUB*. Paper presented at the Sub-regional faculty and development workshop organized by the Near East and South Asia Center for Strategic Studies (Fouad Shihab Leadership College), Beirut, Lebanon.
- October 2012 BouJaoude, S., & BouZeineddine, A. (2012). *Assessing learning outcomes: Changing habits of mind and transforming universities into learning communities*. Paper presented at the 2012 Assessment Institute in Indianapolis, Indianapolis, Indiana, October 28-30, 2012.
- September 2012 BouJaoude, S. (2012). *School-based reform: A personal experience*. Paper presented at the MENA Education Network Meeting (MEDNet) meeting organized by UNICEF Regional Office, Amman, Jordan, September 23-28, 2012.
- September 2012 BouJaoude, S. (2012). *Education reform in MENA countries*. A discussion session conducted during the MENA Education Network Meeting (MEDNet) meeting organized by UNICEF Regional office, Amman, Jordan, September 23-28, 2012.
- May 2012 BouJaoude, S. & BouZeineddine, A. (2012). *Assessing program learning outcomes*. Paper presented at the conference on University learning outcomes in Lebanon organized by the Islamic Center for Guidance and Higher Education, Beirut, Lebanon, May 31, 2012.
- May 2012 BouJaoude, S. (2012). *Competencies, skills, and ability: Reflections on trends in science and mathematics education*. Lecture presented at the College of Natural and Applied Science, Notre Dame University, Lebanon, May 30, 2012.
- May 2012 BouJaoude, S. (2012). *Student centered teaching at the university level*. Workshop presented at Dar Al Hekma College, Jeddah, Saudi Arabia, May 15 and 16, 2012.
- April 2012 BouJaoude, S. (2012). *Methods of science teaching*. Workshop presented at the Spring Educators Conference of the Near East South Asia Council of Overseas Schools (NESA), March 31-April 3, 2012.

- March 2012. *Islam and Evolutionary Science: Secondary Students' Conceptions of Evolution from Five Countries*. Anila Asghar, McGill University, Saouma B. BouJaoude, American University of Beirut, Joshua Rosenau, McGill University, Jason R. Wiles, Syracuse University, Mino Derayeh, York University, Quinn O., McGill University, and Brian Alters, Chapman University. Paper presented at the annual conference of the National Association for Research in Science Teaching, March 24-28, 2012.
- March 2012. *Science Education for Diversity: An International Perspective*. Saouma BouJaoude, American University of Beirut, Lebanon (Organizer), Rola Khishfe, American University of Beirut, Lebanon, Sahar Alameh, American University of Beirut, Sugra Chunawala, Homi Bhabha Centre for Science Education, India, NG Swee Chin, Tunku Abdul Rahman College, Malaysia, Ralf van Griethuijsen, Eindhoven University of Technology, The Netherlands, Perry den Brok, Eindhoven University of Technology, The Netherlands, Ayse Savran Gencer, Pamukkale University, Huseyin Bag, Pamukkale University, Alun Morgan, Exeter University, UK, and Nasser Mansour, Exeter University, UK. Symposium presented at the annual conference of the National Association for Research in Science Teaching, March 24-28, 2012.
- March 2012. *Dialogic Research in a Diverse Globalizing World*. Michiel van Eijck, Eindhoven University of Technology, The Netherlands, Ralf van Griethuijsen, Eindhoven University of Technology, The Netherlands, Ng Swee Chin, Rahman College, Malaysia, Choy Siew Chee, Rahman College, Malaysia, Tunku AbdulRahman College, Malaysia, Saouma B. BouJaoude, American University of Beirut, Lebanon, Sugra Chunawala, Tata Institute of Fundamental Research, India, Chitra Natarajan, Tata Institute of Fundamental Research, India, Huseyin Bag, Pamukkale University, Turkey, Ayse Savran Gencer, Pamukkale University, Turkey, Helen Haste, University of Bath, UK, Alun Morgan, University of Exeter, UK, and Keith Postlethwaite, University of Exeter, UK. Symposium presented at the annual conference of the National Association for Research in Science Teaching, March 24-28, 2012.
- February 2012. BouJaoude S. (2011). Presented a keynote on writing and publishing educational research at the College of Education, King Saud University, Kingdom of Saudi Arabia, February 5, 2012.
- January 2012. BouJaoude, S. (2012). *Student centered teaching at the school level*. A keynote presented at the Kuwait International Educators' Conference. Kuwait City, Kuwait,
- January 2012. BouJaoude, S. (January 2012). *Learning before teaching*. A keynote presented at the conference on Outstanding Practices in Education organized by the Education Institute of the Qatar Supreme Education Council, Doha, Qatar.
- November 2011. BouJaoude, S., Alameh, S., & Radwan, N. (2011). Uncovering the relationships between diversity indicators and views about science: results from the Science Education for Diversity Project. Paper presented at the American University of Beirut, Beirut, Lebanon.
- November 2011. BouJaoude, S., & Ayoubi, Z. (2011). Research in science education in Lebanon: Current status and future prospects. Paper presented at the conference organized by the Ecole Doctoral des Lettres et Des Sciences Humaines et Sociales entitled "Recherche scientifiques et tendances

- contemporaines en sciences humaines et sociales. Beirut, Lebanon, November 30 – December 2, 2011.
- October 2011 Chaired a session on Education in Qatar at the 2011 Building Future Education Conference held in Abu Dhabi on October 25, 2011.
- October 2011 BouJaoude, S. Secondary Education in Lebanon: Status and Challenges. Paper presented at the roundtable on Secondary Education Development in Saudi Arabia organized by the King Abdullah bin Abdulaziz Public Education Development Project (Tatweer). Riyadh, October 17 and 18, 2011
- Sept. 2011 BouJaoude, S., Wiles, J., Asghar, A., & Alters, B. (2011). *Relationships between students' religious beliefs and conceptions of evolution in two Arab countries*. Paper presented at the Biennial meeting of the European Science Education Research Association, September 5-9, Lyon. France.
- Sept. 2011 El Hage, F., BouJaoude, S., & Favre, D. (2011). *The fragmentation of knowledge in Physiology*. Paper presented at the Biennial meeting of the European Science Education Research Association, September 5-9, Lyon. France.
- July 2011 Participated as group facilitator in the Regional Conference on Teacher Policies in the MENA Region organized by Queen Rania Teacher Academy. Amman, Jordan, July 6 and 7, 2011.
- April 2011 BouJaoude, S., & Santourian, G. (2011). The Effect of Using Thought Experiments on Grade 8 Students' Physics Achievement and Views of Nature of Science. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) that was held in Orlando, Florida between April 2 and 6, 2011.
- April 2011. Rizk, N. & BouJaoude, S. (2011). Examining Pre-service Non-Experienced Secondary Science Teachers' Pedagogical Content Knowledge. Paper presented at annual conference of the National Association for Research in Science Teaching (NARST) that was held in Orlando, Florida between April 2 and 6, 2011
- April 2011. Asghar, A., BouJaoude, S., Wiles, J. (2011). Egyptian and Lebanese Students' Conceptions' of Biological Evolution. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) that was held in Orlando, Florida between April 2 and 6, 2011
- April 2011. BouJaoude, S. (2011). *Twenty First Century Skills: An International Perspective*. Paper presented at a seminar organized at the annual conference of the National Association for Research in Science Teaching (NARST) that was held in Orlando, Florida between April 2 and 6, 2011 (Participants included Danielle Dani, Saouma BouJaoude, Sara Salloum, Anil Banerjee, and Rola Khishfe, presenter
- March 2011 BouJaoude, S. (2011). *Research in science and math education: nature and publication requirements*. Seminar presented at the Excellence Research Center of Science and Mathematics Education, King Saud University, Saudi Arabia.
- February 2011 BouJaoude, S. (2011). *Teacher Education in selected universities in Lebanon: Trends and Issues*. Paper presented at the seminar on "Teacher preparation in Lebanese universities: Nature of curricula and possible cooperation among universities" organized by the UNESCO Regional Office Education, Beirut, Lebanon (With Dr. Rabih El Mouhayar).
- January 2011 Participated in the *Science for Diversity* meeting and attended the epiSTEME - 4 Conference, Mumbai, India. January 5-9, 2011.

- Nov. 2010 BouJaoude, S. (2010, November). Science education in Lebanon: Are we preparing students for the 21st century? Paper presented at the 17th International Scientific Conference of the Lebanese Association for the Advancement of Science, Kaslik, Lebanon.
- October 2010 BouJaoude, S. & BouZeineddine, A. (2010). *Assessing Learning Outcomes: Changing Habits of Mind and Transforming Universities into Learning Communities*. Paper presented at the Conference on Program and Learning Assessment in Higher Education organized by the Center for Program and Learning Assessment, Lebanese American University, Beirut, Lebanon, October 29 and 30, 2010.
- April 2010 Saad, R. & BouJaoude. *The relationship between teachers' knowledge and beliefs about science and inquiry and their classroom practices*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, USA, March 20-24, 2010.
- April 2010 Jaber, L. & Saouma BouJaoude. *The Effect of macro-micro-symbolic teaching on grade ten students' conceptual understanding of chemical reactions*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, USA, March 20-24, 2010.
- April 2010 Asghar, A., BouJaoude, S., Wiles, J., & Alters, B. *Islam, evolutionary science, and education: Paradoxes and challenges in Muslim cultures and societies*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, USA, March 20-24, 2010.
- April 2010 Khishfe, R. & BouJaoude, S. *The influence of argumentation on students' understandings of nature of science*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, USA, March 20-24, 2010.
- April 2010 Dagher, Z., BouJaoude, S. & Alameh, S. (2010). Analysis of nature of science coverage in Egyptian and Lebanese middle school science textbooks. Paper presented at the Annual meeting of the National Association for Research in Science Teaching, Philadelphia, Pennsylvania, March 21-24.
- April 2010 Salloum, S. & BouJaoude (Symposium Organizers). *Teacher knowledge(s) and teacher change: Reflections on conceptualizations that inform research and teacher education practices*. Presenters: Sara Salloum, Long Island University, Brooklyn, Saouma BouJaoude, American University of Beirut, Lebanon, Sherry A. Southerland, Florida State University, Julie Gess-Newsome, Northern Arizona University, and Jan H. van Driel, Leiden University, The Netherlands.
- Feb. 2010 BouJaoude, S. (2010, February). *Competencies and educational structures needed to prepare secondary students for the 21st century*. Paper presented at a symposium on secondary education organized by the Ministry of Education in the United Arab Emirates in cooperation with the Arab Bureau of Education for the Gulf States. Dubai, United Arab Emirates.
- Jan. 2010 BouJaoude, S. (2010, January). *How can education become a transformative activity?* Keynote lecture at the First Conference of the Office of Faculty and Instructional development at Qatar University "Sharing Experiences for Excellence in Teaching and Learning at Qatar University", Qatar University.

- Dec. 2009 *Problem solving in science: A tool for transformation*. Presentation and workshop by invitation from the Association of Queen Rania Al-Abdullah Award. Presented at the First Conference for the Winners of the Queen Rania Al-Abdullah Award for the Distinguished Teacher “Excellence in education: Theory to practice”. Al-Aqaba, Jordan, Dec. 18-19, 2009.
- Nov. 2009 BouJaoude, S. & Dagher, Z. (2009). *Status of Science Education in Arab Countries*. Paper presented at the International Science Education Conference 2009, Singapore, Nov. 24-26, 2009.
- Nov. 2009 BouJaoude, S. (2009). *Egyptian and Lebanese students’ conceptions of biological evolution and their relationships to religious beliefs*. Paper presented at the Darwin’s Living legacy: An international conference on Evolution and society, Alexandria, Egypt, November 14-16, 2009.
- Nov. 2009 BouJaoude, S. (2009). *Lessons learned from a cross-cultural study on the theory of evolution*. Presentation at the International Conference on the Role of Higher Education in Fostering the Culture of Dialogue and Understanding. Notre Dame University, Louaize, Lebanon, Zouk Mosbeh, Lebanon, November 4-6, 2009.
- Nov. 2009 BouJaoude, S. (2009). *Science teaching as a conserving or as a subversive activity*. Presentation at the First Conference of the Lebanese Academy of Science on The sciences in Lebanon: Present challenges and future directions, Beirut, Lebanon, November 5-7, 2009.
- Oct. 2009 BouJaoude, S. and Akkary, R. (2009). Workshop on “Action Research for Teachers.”. Amman, Jordan, Annual conference of the Private Schools Council, October 24 and 24.
- Oct. 2009 BouJaoude (2009). Muslim Egyptian and Lebanese students’ conceptions of biological evolution. Paper presented at the symposium on Darwin and Evolution in the Muslim World. A conference at Hampshire College, Amherst, MA October 2–3, 2009
- Sept. 2009 BouJaoude et al. (2009). Biology professors’ and teachers’ positions regarding biological evolution and evolution education in a middle eastern society (co-authors Anila Asghar - The Johns Hopkins University, Jason R. Wiles - Syracuse University, Lama Z. Jaber - American University of Beirut, Diana A. Sarieddine - American University of Beirut, and & Brian J. Alters - McGill University). Paper presented at the Biennial Conference of the European Science Education Research Association (ESERA), Istanbul, August 31 – September 5, 2009.
- Sept. 2009 Pongsophon , BouJaoude, & Yutakom (2009). *Global warming: Can it empty our rice bowl? Co-authors Pongprapan Pongsophon - Science Education, Department of Education, Kasetsart University, Bangkok, Thailand & Naruemon Yutakom - Science Education, Department of Education, Kasetsart University, Bangkok, Thailand).* Paper presented at the Biennial Conference of the European Science Education Research Association (ESERA), Istanbul, August 31 – September 5, 2009.
- Sept. 2009 Jaber, Halwany, Rizk & BouJaoude (2009). *Epistemological beliefs in science: An exploratory study of Lebanese university students’ epistemologies* (Co-authors, Lama Z. Jaber, Sarah A. Halwany, and Nadya G. Rizk - American University of Beirut). Paper presented at the Biennial Conference of the European Science Education Research Association (ESERA), Istanbul, August 31 – September 5, 2009.

- Sept. 2009 Erdogan, Ozel, BouJaoude, Prokop, Usak, Lamanauskas, & Tolli (2009). *A comparative study on university students' attitudes toward a controversial issue: biotechnology* (Co-authors Mehmet Erdogan - Akdeniz University, Antalya, Turkey, Murat Ozel - Gazi University, Dep. of Elementary Education, Ankara, Turkey, Pavol Prokop - Trnava University, Department of Biology, Slovakia, Muhammet Usak - Dumlupinar University, Kütahya, Turkey, Vincentas Lamanauskas - Siauliai University, Siauliai, Lithuania, William W. Toili - Masinde Muliro University of Science and Technology, Kenya). Paper presented at the Biennial Conference of the European Science Education Research Association (ESERA), Istanbul, August 31 – September 5, 2009.
- Sept. 09 *Priorities in science education for today and tomorrow: international perspectives on critical issues*. Panel held at the Biennial Conference of the European Science Education Research Association (ESERA), Istanbul, August 31 – September 5, 2009. (Participants: Jane Butler Kahle (Miami University), Vincent Lunetta (Penn State University), Ed van den Berg (AMSTEL Institute University of Amsterdam), Mariona Espinet Blanch (Universitat Autònoma de Barcelona), Colette Murphy (School of Education Queen's University), M. Fatih Tasar (Gazi Universitesi, Gazi Egitim Fakultesi), Kenneth Tobin (The Graduate Center, City University of New York), Saouma B. BouJaoude (American University of Beirut)
- June 2009 BouJaoude, S. & El Hage, F. (2009). *Recherches en didactique des sciences au Liban (2002-2008): Tendances & Perspectives*. Carrefour D'échange, Faculté des Sciences de l'éducation, Beyrouth, Liban, 22 Juin 2009.
- June 2009 *Teacher Education at the American University of Beirut: Transformation and dilemmas*. Paper presented at the regional conference on teacher education at a crossroads organized by the Queen Rania Teacher Training Academy and Columbia University, Amman, Jordan, June 15-16, 2009.
- April 2009 BouJaoude, S. "Science education research in Lebanon (2003-2008): Trends and issues". Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) that will be held in Garden Grove, CA, April 17-21, 2009
- April 2009 Salloum, S., & BouJaoude, S. "American Muslim students perceptions of science and science learning: An exploratory study in a private Islamic school paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) that will be held in Garden Grove, CA,
- March 2009 *Egyptian and Lebanese Secondary School Students' Conceptions' of Biological Evolution and their Relationships to Religious Beliefs*. Paper presented at the Symposium on Islam and Evolution, McGill University, Montreal, Canada, March 30 and 31, 2009.
- March 2009 *Role of curricula and teachers in preparing students for the 21st century*. Keynote address at the Symposium on Future Vision for School Curricula, organized by the College of Education, Sultan Qaboos University, Oman.
- Feb. 2009 Students, high school teachers, and university faculty conceptions of the theory of Evolution. Seminar organized by the Lebanese Association for Educational Studies, Beirut, Lebanon, February 21.

- Nov. School Based Reform (TAMAM Project). Presentation at the FIKR7 Conference organized by the Arab Thought Foundation, Cairo, Egypt, November 14.
- April 2008 Problem solving: A tool of transformation in science. A workshop presented at the Educational Symposium organized by orthodox schools, Beirut, April 17-18.
- April 2008 Project on School-based reform in Arab countries (TAMAM Project). Paper presented at the fifth Arab Education Forum, Sukhirat, Morocco, April 2-4, 2008.
- March 2008 BouJaoude S. & Jurdak, M. "Integrating physics and math through microcomputer-based labs (MBL): Effects on discourse type and quality and mathematization". Presented at the annual conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 30- April 2, 2008.
- March 2008 Salloum, S. & BouJaoude, S. "Classroom talk: Analysis of a science teacher balancing teaching to the test and for conceptual understandings" presented at the annual conference of NARST, Baltimore, March 30 - April 2, 2008.
- March 2008 Yacoubian, H. & BouJaoude, S. "The effect of reflective discussions following inquiry-based laboratory activities on students' views of nature of science" presented at the annual conference of NARST, Baltimore, March 30 - April 2, 2008.
- March 2008 BouJaoude and others. "Science education research traditions in Europe: Shedding light on didactics" symposium at the annual conference of NARST, Baltimore, March 30- April 2, 2008. I organized this seminar as a member of the NARST Committee on the History of Science Education.
- August 2007 BouJaoude, S., Jurdak, M., & Ghumrawi, N. (2007, August). *Discourse type and time use in microcomputer-based lab versus verification type lab in physics*. Paper accepted for publication at the biennial conference of the **European Science Education Research Association (ESERA)**, Malmö University, Malmö Sweden.
- July 2007 Participated in the *World Conference on Science and Technology Education*, July 8-12, 2007, Perth, Australia and the *UNESCO International Science Education Policy Forum* (July 13, 2007), Perth, Australia by invitation from UNESCO.
- April 2007 *Learning before teaching*. Keynote speech at the Hariri Foundation Hariri High School II professional day, April 28, 2007
- April 2007 *Educational challenges and the preparation of teachers in the Arab states* (in Arabic). Paper presented at the Arab Education Forum, organized by the Arab Thought Foundation, Amman, Jordan, April 2007.
- April 2007 *College Students Perceptions of the Theory of Evolution* (Hayat Hokayem, AUB, Co-presenter). Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST), New Orleans, April 15 – 18.
- April 2007 *University Science Educators: Are We Learning From Each Other's Experiences?* Paper presented as part of a seminar on "Professional Development of Science Educators Worldwide" (Justin Dillon, King's College, UK, Co-presenter) at the annual conference of the National Association for Research in Science Teaching (NARST), New Orleans, April 15 – 18.

- February 2007 Jurdak, M., BouJaoude, S., & Ghumrawi, N. (2007). *Comparison of mathematization in microcomputer based laboratory (MBL) and verification –type laboratory (VTL) in physics*. Paper presented at the Conference of the European Research in Mathematics Education (CERME), Larnaca, Cyprus, February 21-26, 2007.
- May 2006 *Chemistry teachers' practices in public and private schools in Beirut*. Paper presented at the Conference on Preparing Teachers for the Third Millennium, Al-Isra Private University, Amman, Jordan, May 18 and 19, 2006 (Co-presenter with Dr. Zalpha Ayoubi, Lebanese University).
- May 2006 *A theoretical model for the preparation of science teachers*. Paper presented at the Conference on Preparing Teachers for the Third Millennium, Al-Isra Private University, Amman, Jordan, May 18 and 19, 2006
- April 2006 *Relationship between students' views about knowing and learning physics and their understanding of physics* (Faten Masri is co-presenter) Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) (San Francisco, April 3 – 6, 2006).
- April 2006 Contributed to a seminar on “*Research Schools for Graduate Students: European and South African Models of Research Enculturation*” sponsored by the NARST International Committee at the annual conference of the National Association for Research in Science Teaching (NARST) (San Francisco, April 3 – 6, 2006).
- April 2006 Contributed to a seminar on “*European' and 'American' Perspectives on Research into Teaching and Learning*” Sponsored by the European Science Education Research Association (ESERA) and NARST International Committee at the annual conference of the National Association for Research in Science Teaching (NARST) (San Francisco, April 3 – 6, 2006).
- August 2005 *A decade of science education research in Lebanon (1992-2002)*. Trends and issues, paper presented as part of the NARST Sponsored Seminar at the 2005 European Science Educational Research Association (ESERA) conference, Barcelona, Spain (Co-presenter: F. Abd-El-Khalick)
- August 2005 *Teaching Authentic Science: Effect on Conceptual Change and Understanding the Nature of Science*. Paper presented at the 2005 European Science Educational Research Association (ESERA) conference, Barcelona, Spain.
- April 2005 *The role of the Lebanese press in enhancing scientific and technological literacy*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, Texas, April 3-7, 2005.
- April, 2005 Ho, H. H., He, M. F., Stacki, S. L., Swadener, E. B., Sunal, D. W., Sunal, C. S., Mutua, K., Stevens, D. D., Guven, I., Eilam, B., Dancy-Benjamin, G. V., Green, S. A., Kanga, A. W., Koutsoulis, M., Ganser, T., Abd-El-Khalick, F. S., BouJaoude, S. B., & Shen, Y. J.). *Research on education in Africa, the Caribbean, the Middle East, and the United States*. Interactive symposium conducted at the annual meeting of the American Educational Research Association, Montreal, Canada.
- April, 2005 Sunal, C. S., Mutua, K., Ganser, T., Abd-El-Khalick, F. S., BouJaoude, S. B., Guven, I., B., Koutsoulis, M., Stevens, D. D., & Swadener, E. B. *Through the eyes of the insider: Topics in research in Africa, the*

- Caribbean and the Middle East*. Interactive symposium conducted at the annual meeting of the American Educational Research Association, Montreal, Canada
- January 2005 *Innovative methods for teaching science at the university level*. Workshop presented in Sana'a, Republic of Yemen between January 15 and 17, 2005. The workshop was sponsored by the UNESCO Cairo Office, National UNESCO Commission of Yemen, Islamic Educational, Scientific and Cultural Organization, and the University of Sana'a.
- Oct. 2004 *Improving science teaching methodology at the university level: Synchronizing the teaching approaches at the secondary and university levels*. Paper presented at the International Conference on Teaching at Universities: Present and future challenges (Theme 5 -- Policies and methodologies of teaching science within universities and the preparatory measures to that end at school level) organized by the Lebanese National Commission for UNESCO, Beirut, Lebanon, October 5-6.
- April 2004 *Lebanese Parents' Perceptions of Science and Science Teaching*. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST) (Vancouver, Canada, March 31-April 3, 2004) (Co-Presenter with Lina Hajj).
- April 2004 *Do Student Views of Nature of Science Influence Their Conceptual Understandings of Science Content?* (Co-Presenter with Dr. Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign). Presented at the annual conference of the National Association for Research in Science Teaching (NARST) (Vancouver, Canada, March 31-April 3, 2004).
- April 2004 *Science education in the Arab States: Current status and future directions*. Paper presented in the Symposium on International Science Education: Applications and Opportunities for Research, Scholarship, and Service during the annual conference of the National Association for Research in Science Teaching (NARST) (Vancouver, Canada, March 31-April 3, 2004)
- January 2004 *Application of New Information Technology in the Arab States to Achieve the Goals of Education for All presented in the Arab Regional Conference on Education for All (EFA) National Plans: What's Next* January 20-23, 2004.
- Dec. 2003 Presented a public lecture on Active Learning. Kingdom Schools, Saudi Arabia.
- August 2003 *The Effect of Using Drama in Science Teaching on Students' Conceptions of Nature of Science* (Suha Sowwan and Fouad Abd-El-Khalick, Co-presenters). Presented at the 2003 meeting of the European Science Education Research Association (ESERA), Nordwick, Netherlands, August 19-23, 2003.
- May 2003 *Teaching and learning by inquiry: Role of the teacher and technology*. Paper presented at the regional workshop on evaluating science and technology curricula, UNESCO, Beirut, May 20-22 (In Arabic).
- March 2003 *Careful! It is H₂O: Teachers' Conceptions of Chemicals* (Co-presenter: Sara Salloum). Paper presented at the annual conference of the National Association for Research in Science Teaching, Philadelphia, PA, March 23-26, 2003.
- March 2003 *The Effect of using Concept Maps as Study Tools on Achievement in Chemistry* (Co-presenter: May Atieh). Paper presented at the annual

- conference of the National Association for Research in Science Teaching, Philadelphia, PA, March 23-26, 2003.
- Nov. 2002 *Scientific literacy in the Lebanese curriculum*, Paper presented at the Conference on The Third Millennium: What education for What youths held at the University of the Holy Spirit, Kaslik, Lebanon. November 16, 2002.
- September 2002 *Lebanese middle school students' definitions of science and perceptions of its purpose and usage*. Paper presented at the Droshai Seminar on Science Learning in the Mediterranean by the University of Cyprus, Nicosia, Cyprus, September 11-15, 2002.
- April 2002 *Relationships between selective cognitive variables and students' ability to solve chemistry problems*. Paper presented at the annual conference of the National Association for Research in Science teaching, New Orleans, LA, April 6-10, 2002.
- April 2002 *Supply and demand of science teachers in the Arab States* (sponsored by ICASE and the NARST International Committee). Presented at the annual conference of the National Association for Research in Science teaching, New Orleans, LA, April 6-10, 2002.
- April 2002 *The New School Program: An educational Development activity*. Seminar presented at the Faculty of Health Science, American University of Beirut
- March 2002 *Using computers in the science laboratory*. Brummana High School, Brummana, Lebanon.
- January 2002 *Principles of teaching and learning*. Lecture presented at Saint Joseph School, Cornet Chahwan, January 11, 2002.
- Oct. 2001 *Developing basic and secondary education in the Arab world to incorporate innovations in science and technology*. Invited paper presented at the specialized Symposium on Science and technology in the Arab World: Present status and future prospects, organized by Shouman Foundation, Amman, Jordan, October 20 and 21, 2001.
- May 2001 *Developing science curricula to prepare students for the future*. Invited paper presented at the Symposium on curricula in the Arab World organized by the University of Bahrain, May 1-2, 2001.
- April 2001 *Lebanese Secondary School Students' Environmental Knowledge and Attitudes*. Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign; Maha Haidar-Makki, American University of Beirut; Saouma BouJaoude, American University of Beirut. Paper presented at the annual meeting of the American Educational Research Association, April 10 –14, Seattle, Washington
- March 2001 *The Use of Drama in Science Teaching: Its Influence on Students' Attitudes and Conceptions of Nature of Science* (Co-Presenter: Suha Sowwan). Paper presented at the annual conference of the National Association for Research in Science teaching, St. Louis, MI, March 25 – 28, 2001.
- March 2001 *Scientific inquiry in the Lebanese science curriculum* in the seminar on Inquiry in Science education: International perspectives (sponsored by ICASE and the NARST International Committee). Presented at the annual conference of the National Association for Research in Science teaching, St. Louis, MI, March 25 – 28, 2001.

- June 2000 *Science assessment framework in the new Lebanese Curriculum: Background, hurdles to implementation, and solutions.* Panel organized by the Faculty of Education, Lebanese University, Beirut, Lebanon.
- April 2000 *Students' and teachers' conceptions of chemicals.* Paper presented at the annual conference of the National Association for Research in Science teaching, New Orleans, LA, April 28-31, 2000.
- April 2000 *The Lebanese Science Curriculum as a vehicle to achieve scientific literacy for all.* Paper presented at the Symposium on Connecting communities through research in science and technology education for all organized by the International Committee of the National Association for Research in Science Teaching and ICASE, New Orleans, LA, April 28-31, 2000.
- April 2000 *Trends in science teacher education.* Keynote address in the Conference on teaching science: Content, methodologies, and evaluation. Universite Saint Joseph, Beirut, Lebanon.
- Sept. 1999 *Cooperative learning and the teaching of science,* Lecture presented at Antonin Sisters School, Khaldiyyeh, Zghorta, Lebanon.
- July 1999 Constructivism in science education and problem solving and creativity in teaching chemistry: Two Seminar Presented at the Department of Chemical Engineering, University of Rovira i Virgili, Tarragona Spain.
- April 1999 *Environmental knowledge: Transforming knowledge into action.* Paper presented at the sixth Annual Conference on Global Education: For a child-friendly school. Lebanese American University, Beirut, Lebanon.
- March 1999 *Students' problem solving strategies in stoichiometry and their relationships to conceptual understanding and learning approaches.* Paper presented at the annual conference of the National Association for Research in Science teaching, Boston, Massachusetts, March 28-31, 1999 (Hala Barakat Co-presenter)
- February 1999 Cooperative learning in teaching science. Lecture presented at Saint Joseph School, Cornet Chahwan, Lebanon.
- Nov. 1998 *Representation of scientific literacy themes in the Lebanese curriculum.* Paper presented at the Conference on Science, Technology, and Society organized by Center for Behavioral Research, American University of Beirut, Beirut, Lebanon, Nov. 26 -28, 1998
- Nov. 1998 *Introduction to constructivism and its implications to classroom practice with emphasis on the role of teachers and students in a constructivist classroom.* Workshop presented to IC teachers during a professional development day.
- July 1998 *Teaching critical thinking skills.* Lecture presented at the retreat of the AUB School of Nursing. Bois de Bologne, Lebanon
- June 1998 *Considerations necessary for implementing the New Lebanese Science curriculum.* Meeting with science coordinators and teachers in catholic schools in Lebanon organized by the General Secretariat of the Lebanese Catholic Schools. Beirut, June 24.
- June 1998 *Practice teaching as professional development.* Invited lecture delivered during the Professional Day for Cooperating Teachers organized by the Department of Education, American University of Beirut.
- April 1998 *Creativity in science teaching.* Invited lectures (two) at the annual meeting of the Private Schools Council, Amman, Jordan, April 29-30, 1998.

- April 1998 *Helping students confront difficulties with solving stoichiometry problems.* Paper Presented at the annual convention of the National Science Teachers Association, Las Vegas, Nevada, April 16-19, 1998 (Hala Barakat, Co-Presenter).
- April 1998 *Analogies, Summaries, and Question Answering in Middle School Life Science: Effect on Achievement and Perceptions of Instructional Value.* Paper presented at the annual conference of the National Association for Research in Science Teaching, San Diego, California, April 19 -22, 1998
- March 1998 *New trends in teaching Chemistry at the pre-college level.* Invited lecture presented at the meeting of the Syrian Chemical Association. March 28, 1998, Homs, Syria.
- February 1998 *New trends in teaching chemistry.* Lecture presented at the Symposium on the New Pre-College Chemistry Curricula organized by the Syndicate of Chemists in Lebanon, February 21, 1998. (In Arabic)
- February 1998 *Scope, sequence and coordination in the new Lebanese Science Curriculum.* Lecture presented at Saint Joseph School, Cornet Chahwan, Lebanon.
- January 1998 *Alternative concepts in science education and their remediation.* Lecture presented at the Department of Education, University of Balamand.
- September 1997 *Framework of the new Lebanese Science Curriculum.* Lecture presented at Jesus and Mary School, Rabweh, Lebanon
- June 1997 *Framework of the new Lebanese Science Curriculum.* Lecture presented at Hovakimian-Manoukian School, Sin-El-Fil.
- May 1997 *Framework of the new Lebanese chemistry curriculum.* Lecture presented at the First Science teachers Conference, American University of Beirut, Beirut, Lebanon, May 3.
- April 1997 *Contemporary conceptions of the philosophy of science, learning, and teaching and their impact on science education.* Paper presented at the seminar organized by the Lebanese Association for Education Studies, Beirut, Lebanon, April 11.
- March 1997 *Integrating environmental issues in the teaching of science.* Lecture presented at the Lebanese American University, March 10.
- March 1997 *College students' generic and specific conceptions of theories.* Paper presented at the annual meeting of the National Association for Research in Science Teaching, Chicago, IL, March 21-24, 1997.
- February 1997 *An overview of the New (Lebanese) Intermediate Science Curriculum.* Lecture presented at IC Middle School, Wednesday, Feb. 26, 1997.
- Dec. 1996 *Lebanese Teachers' and Students' Perceptions of the Nature of Science.* Paper presented at the Second Conference on the future of science and mathematics and the needs of the Arab Society, Tunis, Tunisia December 19-22, 1996.
- April 1996 *Encouraging students to think scientifically using hands-on activities.* Workshop conducted at the Annual meeting of the Private school Council, Amman, Jordan, April 18-19, 1996
- April 1996 *Epistemology and sociology of science according to Lebanese Educators and Students.* Paper presented at the annual meeting of the National Association for Research in Science Teaching, Saint Louis, Missouri, March 31- April 3, 1996.
- Oct. 1995 *Analysis of environmental issues in the teaching of science.* Presented in the workshop organized by the Green Forum for Lebanese elementary and

- middle school teachers. American University of Beirut Alumni Club, October 7, 1995.
- Oct. 1995 *Scientific views and religious beliefs of college students: The case of biological evolution.* Paper presented at the International History and Philosophy in Science Teaching Conference, Minneapolis, Minnesota, October 29-Nov. 2, 1995 (With Dr. Zoubeida Dagher).
- May 1995 *Constructivist teaching in science.* Lecture presented at the Antonin School in Zahle, Lebanon (With Dr. Zoubeida Dagher).
- April 1995 Presider in a session on *Informal Science Education* during the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA, April 22-25, 1995.
- April 1994 Position Paper on the Environment in Lebanon (Environmental Education Component). Regional Conference on the Environment: Jordanian University of Science and Technology, Irbid, Jordan, April 28- May 1, 1994.
- March 1994 *Making sense of the nature of science through demonstrations.* Paper presented at the annual Conference of the National Science Teachers Association, Anaheim, California, March 30 - April 2, 1994.
- March 1994 *Environmental Education in Lebanon.* Paper presented at the conference on Environmental problems at the national and the international levels organized by R. Mawad Foundation and Friedrich Newman Foundation. Carlton Hotel: Beirut Lebanon.
- Apr. 1993 *Education in the Republic of Yemen: present status and future prospects.* Paper presented at the conference of the Northeastern Educational Research Association, Portsmouth, NH April 1993.
- Apr. 1993 *Students systematic errors when solving kinetic and equilibrium problems.* Paper presented at the Annual Conference of the National Science Teachers Association, Atlanta, Georgia.
- June 1991 *New directions for science education.* Lecture presented at West Genesse School District, Syracuse, New York, June 24, 1991.
- May 1991 *Teaching and learning science in Lebanon:* a presentation to honors students at Liverpool High School, Liverpool, New York, May 21, 1991.
- Apr. 1991 *The relationship between students formal reasoning ability, prior knowledge, approaches to studying, and their performance in chemistry -- Part I.* Paper presented at the annual meeting of the New England Educational Research Organization Portsmouth, NH, April 24-26, 1991.
- Apr. 1991 *The relationship between students' formal reasoning ability, prior knowledge, approaches to studying, and their performance in chemistry -- Part II.* Paper presented at the annual meeting of the National Association for Research in Science Teaching, Fontanna, WI April 7-10, 1991.
- Mar. 1991 *Identifying high school students' erroneous problem solving strategies in chemistry.* Paper presented at the Annual conference of the National Science Teachers Association, Houston, Texas, March 27-30.
- Mar. 1991 *Similarities and differences between the science curriculum and teaching in Lebanon and the United States.* Lecture presented at Liverpool High School, Liverpool New York.
- Jan. 1991 *New initiatives in teacher education in the United States:* Panel member during the first meeting of the Syracuse University School of Education Forum on Teacher Education.

- Oct. 1990 *Careers in Chemistry Teaching*. Paper presented during the regional career day conducted by the American Chemical Society, Syracuse University, Syracuse, NY. Oct. 26, 1990.
- Apr. 1990 *Teaching for conceptual change*. Paper presented at the annual conference of the National Science Teachers Association, Atlanta, GA, April 5-8, 1990.
- Apr. 1990 *The relationship between high school students' learning style and their chemical misconceptions*. Paper presented at the annual conference of the National Association for Research in Science teaching, Atlanta, GA April 8-11, 1990.
- Mar. 1990 *Panel: the Teaching Assistant Program: the academic job hunt* with Dean Robert Jensen and Chuck Reutlinger, Personnel Office.
- May 1989 *The grant-in-aid program: an innovative program for training science teachers*. Paper presented at the regional conference of the Association for the Education of Teachers in Science Syracuse NY, May 5-6, 1989.
- Mar. 1989 *A study of conceptual change in junior high school students during instruction about the concept of burning*. Paper presented at the annual conference of the National Association for Research in Science Teaching, San Francisco, California. Abstract Appeared in Science Education Information Report prepared by the ERIC Science and Mathematics Education Clearinghouse. Full document appeared as a Microfiche in ERIC.
- Apr. 1988 *Identifying, categorizing, and correcting students' misconceptions about burning*. Poster paper presented at the annual conference of the National Association for Research in Science Teaching, Lake of the Ozarks, Missouri. Abstract Appeared in Science Education Information Report prepared by the ERIC Science and Mathematics Education Clearinghouse.
- July 1987 *Developing a teacher training technique using concept maps*. Co-presenter of paper at the International Seminar on Misconceptions in Science and Mathematics, Cornell University, Ithaca, NY. The paper is published in the proceedings of the seminar.
- Apr. 1987 *Emerging trends from ten years of science education research, 1976-1986*. Paper presented at the annual conference of the National Association for Research in Science Teaching, Washington DC Abstract Appeared in Science Education Information Report prepared by the ERIC Science and Mathematics Education Clearinghouse.
- Apr. 1987 *Needs of Teachers regarding the teaching of science*. Paper presented at the National Convention of the National Science Teachers Association, Washington DC The paper was prepared and presented in collaboration with Dr. Glean Markle, Associate Dean, College of Education, University of Cincinnati and Dr. Robert Townsend, Science Supervisor, Cincinnati Public Schools.
- Mar. 1986 *Problem Solving for Secondary Science Teachers*. Paper presented at the National convention of the National Science Teachers Association, San Francisco.
- Apr. 1986 *Using hands-on activities in elementary science*. Co-presenter of workshop at the regional convention of the National Science Teachers Association, Indianapolis, Indiana.

Workshops

- Sept. 1993 Participated in the environmental education tour organized by the American University of Beirut to visit environmental education programs in institutions of higher learning and Government Agencies (EPA) in the United States.
- Oct. 1994 Participated in a workshop on environmental assessment organized by R. Mawad Foundation and Friedrich Newman Foundation. Ehden, Lebanon.
- Sept. 1995 Coordinated a three-day workshop entitled Environmental activities in science teaching at the Division of Education Programs, American University of Beirut.
- July 1996 Participated in two workshops at Duke University, Durham, North Carolina and the School of Environmental Science and Forestry at Syracuse, New York. The workshops focused on developing and implementing environmental programs and activities at the K-12 levels.
- Sept. 1996 Coordinated a three-day workshop on Designing Science Laboratory Activities at the Division of Education Programs, American University of Beirut.
- Sept. 1997 Coordinated a three-day workshop on Misconception in Science at the Division of Education Programs, American University of Beirut.
- May 1997 Chairman of the Organizing Committee of the First Science and Math Teachers' Conference on The role of science and math teachers in developing and Implementing school curricula held on May 3, 1997 at the American University of Beirut and Editor of the Conference proceedings.
- Dec. 1999 Presented lectures in the Workshop for Science and Technology Supervisors on Environmental Education for secondary classes in the Arab World organized by the UNESCO Regional Office for Education to participate as a consultant in a training workshop for supervisors of science at the secondary level in the Arab countries. Muscat, Oman, December 12 - 17, 1998.
- July 1999 Participated in the activities of the Science Education for Public Understanding Project (SEPUP) National Fellows Conference that focused on the use of issue-oriented science education SEPUP materials. These programs included CHEM-2, SEPUP Modules, Issues, Evidence and You, Science and Sustainability, and Science and Life Issues. Also, participated in the SEPUP Leadership Institute whose purpose was to provide an intensive, interactive experience devoted to developing and enhancing participants' ability to act as consultants and leaders of professional development experiences for schools adopting SEPUP materials. The National fellows Conference and the Leadership Institute were part of the SEPUP Conference held between July 19 and July 23, 1999 at the Lawrence Hall of Science, University of California at Berkeley
- Jan. 2002 Workshop on Active learning in science at the elementary level. Egypt New School Program, Fayoum and Cairo, Egypt.
- June 2003 Coordinated and was a presenter in the Gulf Reform Project workshop held at AUB.
- Gave workshops and provided consultations for Al-Qualaa School, Sidon, Al-Manar School, Kobaih, Brummana High School, Brummana, Jesus and Mary School, Rabweh, North Lebanon College, Zghorta, Lebanon, Islamic Institute for Learning and Instruction, Tripoli, and Schools of Al-Beka's (in AUB

Farm), Kingdom School, Saudi Arabia, Al-Maharat Schools, Saudi Arabia, News School program, Egypt.