

EXHIBIT 1

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Alexandros Makriyannis

*Board of Trustees' Distinguished Professor of Medicinal Chemistry
And Molecular and Cell Biology
Director, Center for Drug Discovery*

Biography, Bibliography and Professional Summary

- 1960 B.Ph. Chem., University of Cairo
- 1967 Ph.D. (Medicinal Chemistry), University of Kansas (with E.E. Smissman)
- 1967-69 Post-doctoral Fellow (Synthetic Organic Chemistry), University of California, Berkeley, CA (with H. Rapoport)
- 1969-70 Senior Chemist, Smith, Kline and French Laboratories, Philadelphia, PA
- 1971-72 Research Associate, Department of Biochemistry and Pharmacology, Tufts Medical School, Boston, MA
- 1972-74 Assistant Professor, Department of Biochemistry and Pharmacology, Tufts Medical School, Boston, MA
- 1974-80 Assistant Professor of Medicinal Chemistry, University of Connecticut, Storrs, CT
- 1976- Member of Institute of Materials Science, University of Connecticut, Storrs, CT
- 1980-86 Associate Professor of Medicinal Chemistry, University of Connecticut, Storrs, CT
- 1980-87 Member of Polymer Science Program, University of Connecticut, Storrs, CT
- 1981-87 Head, Medicinal Chemistry and Pharmacognosy, School of Pharmacy, University of Connecticut, Storrs, CT
- 1983-96 Visiting Scientist, F. Bitter National Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA
- 1986- Professor of Medicinal Chemistry and Pharmacognosy, University of Connecticut, Storrs, CT
- 1987-98 Member of Biomolecular and Structural Analysis Center, University of Connecticut Health Center, Farmington, CT
- 1994- Director of the Drug Design Program for the State of CT supported Critical Technologies Program
- 1994- Professor of Molecular and Cell Biology (joint), University of Connecticut, Storrs, CT
- 1997- Director, Center for Drug Discovery, University of Connecticut, Storrs, CT
- 1998- Professor of Pharmacology (joint), University of Connecticut Health Center, Farmington, CT
- 1999- Chair, AAPS, Division of Medicinal Chemistry and Natural Products
- 2002- Board of Trustees' Distinguished Professor of Medicinal Chemistry And Molecular and Cell Biology, University of Connecticut, Storrs, CT

Professional Activities:

- McNeil Endowment Fellowship (1964-67)
- Chairman of Organizing Committee for 1st through 9th Cyprus Conference on "New Methods in Drug Research" (1983, 1985, 1987, 1989, 1992, 1994, 1996, 1999, 2001, 2004)
- Consultant NIAAA Intramural Research Program (1985-87)
- Ad Hoc Member, NIDA Study Section (1985-89)
- Senior Advisor National Research Council of Greece (1985-present)
- NIDA Special Rev. Committee (1987-present)
- Member of Ad Hoc Committee NIAID (1990-1992)
- Research Scientist Award, NIDA (1990-95; 1995-2000)
- President International Cannabis Research Society (1993)
- Fellow, American Association for the Advancement of Science (1993)
- Distinguished Scientist Award, University of Connecticut Alumni (1996)
- National Institutes of Health MERIT Award (1997)
- Fellow, American Association of Pharmaceutical Sciences (1997)

Member, NIDA-L Medications Development Study Section (1998-present)
 Member, NIH MCDN-5 Review Committee (1998-present)
 Chair, American Association of Pharmaceutical Scientists, Division of Medicinal and Natural Products Chemistry (1999-2000)
 PharmSci, Senior Associate Editor for Medicinal Chemistry (1999-present)
 Senior Scientist NIDA Award (2000-2005)
 Member, Nat. Advisory Council for the Center for Medicinal Cannabis Research (2001-present)
 Chair, NIDA-L Medications Development Study Section (June 2001-present)
 Member, Editorial Board, *Il Farmaco*, (June 2001-Present)
 Member, Editorial Board, Journal of Medicinal Chemistry, (January 2002-Present)
 Board of Trustees' Distinguished Professor, University of Connecticut, (April 2002- Present)
 2002 Research Achievement Award in Drug Design and Discovery, American Association of Pharmaceutical Scientists (2002)
 Member, Editorial Advisory Board, Letters in Drug Design and Discovery (2002-Present)

Fields of Specialization:

Drug design and synthesis; molecular recognition; membrane biophysics; membrane protein purification and characterization; nuclear magnetic resonance spectroscopy; high throughput technologies

Research Interests:

Cannabinergic agents; drugs of abuse; drug-membrane interactions; blood-brain barrier; drug transport and targeting; structure of G-protein coupled receptors and transporters; antineoplastic ether lipids; targeted antineoplastic agents; anesthetic and neuronal steroids; pharmacogenomics

Consulting Activities:

- Glaxo Wellcome
- Bristol Myers
- Genaissance Pharmaceuticals (genetic targets, genetic diversity-based drug design)
- Medochemie (Cyprus)
- Pfizer
- Synaptic Corporation

United States Patents:

08/08/95 5,440,052 "Compositions Useful as a Cannabinoid Receptor Probe"
 02/06/96 5,489,580 "Phospholipid Compounds and Use Therefore"
 11/18/97 5,688,825 "Novel Anandamide Amidase Inhibitors as Analgesic Agents"
 04/28/98 5,744,459 "Phospholipid Compounds and Use Therefore"
 02/16/99 5,872,148 "Compositions Useful as a Cannabinoid Receptor Probe"
 02/23/99 5,874,459 "Anandamide Amidase Inhibitors as Analgesic Agents"
 10/03/00 6,127,399 "Pyrazole Derivatives as Cannabinoid Receptor Antagonists"
 12/26/00 6,166,066 "Cannabinoids Selective for the CB2 Receptor"

United States Patent Applications:

60/084,008	09/067,113	09/328,742
60/088,568	09/250,698	09/553,499
60/109,615	09/304,720	09/701,989

Provisional Patent Applications:

60/264,385	60/305,228
60/264,855	60/316,515

International Patent Applications:

PCT/US96/19394	PCT/US00/28818	PCT/US00/41239
PCT/US99/12900	PCT/US00/28832	PCT/US00/41248
PCT/US99/28136	PCT/US00/41238	

Canadian Patent Applications:

2,237,822	2,340,445
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European Patent Applications:

999216377	999301765
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Research Funding (Current):*FEDERAL GRANTS*

2 PO1 DA09158	(4/1/2001-3/31/2006)	\$4,818,675 (Total direct costs)
"Endocannabinoid Active Sites as Therapeutic Targets"		
5 R01 DA07215	(9/1/96-7/31/07)	\$1,795,917 (Total direct costs)
"Cannabimimetic Ligands and Drugs"		
5 R01 DA03801	(2/5/97-12/31/01)*	\$1,525,810 (Total direct costs)
	(1/1/02-12/31/07)	\$1,627,250
"Molecular Basis of Cannabinoid Activity"		
*Supplements:		
Minority Postdoctoral Supplement (Joel Kawakami)	(2/5/97-12/31/99)	\$114,000
Majority Minority Program	(3/15/97-12/31/99)	\$265,000
Fluorescent Probes	(1/1/98-12/31/01)	\$138,634
Minority Postdoctoral Supplement (Sonya Palmer)	(2/10/00-12/31/01)	\$107,960
Majority Minority Program	(2/10/00-12/31/01)	\$75,000
Summer Undergraduate Research	(5/22/00-7/31/00)	\$7,424
Summer Undergraduate Research	(5/22/03-7/31/03)	\$3,000
1 R01 DA11949	(5/5/99-3/31/03)	\$1,228,011 (Total direct costs)
"Dopamine Transporter Ligands as Cocaine Medications"		
1 T32 DA07312	(7/1/99-6/30/04)	\$1,234,759 (Total direct costs)
"Training Program in Medications Development for Drugs of Abuse"		
F00-DA12413	(9/23/99-7/31/03)	\$193,147 (Total direct costs)
Co-Investigator with the University of California		
"Investigating the Properties of the Anandamide Transporter"		
K05 DA00493-01	(9/30/00-8/31/05)	\$646,920 (Total direct costs)
Senior Research Scientist Development Award		
"Studies on Cannabinoid Effects and Cannabimimetic Drugs"		

STATE GRANTS

98CT017	(1/1/99-12/31/01)	\$150,000 (Total direct costs)
"Development of Fluorescent Probes and Assays for Drug Receptors"		
99CT020	(8/1/99-7/31/02)	\$293,383 (Total direct costs)
"Estrogen Receptor Modulators for Diverse Breast Cancers"		

INDUSTRIAL GRANTS

Glaxo Wellcome	(9/1/86-)	\$60,000 (Total direct costs)
"Design and Synthesis of Antineoplastic Alkyl Lysophospholipids"		
Glaxo Wellcome	(9/1/87-)	\$137,836 (Total direct costs)
"Antineoplastic Ether Lipids Molecular Mechanisms of Action"		
WHO	(8/1/97-)	\$2,500 (Total direct costs)
"World Health Organization Research Award"		
Pfizer Central Research	(2/1/98-)	\$50,000 (Total direct costs)
"Development of Porcine Somatotropin Receptor Binding Assays"		

Mentoring Activities:*Graduate Students Directly Advised Since 1995*

Student	Dates Attended	Degree Obtained	Present Location
Sonyuan Lin	1988-1995	M.Sc., Ph.D.	Admetric BioChem, Inc.
Lionel Ayotte (U.S. Natl.)	1990-2002	Ph.D.	UConn NIH Training Grant
Xiuyan Li	1990-1995	Ph.D.	Allied Signal
Andreas Goutopoulos	1992-2000	M.Sc., Ph.D.	Serono Reproductive Biology Institute
Xiayou Tian	1993-		Current Student
Abou Zeid Khaled	1994-1995	Ph.D.	Associate Professor, University of Cairo
Dai Lu	1994-		Current Student
Ce Qin	1994-1997	M.Sc., Ph.D.	Uniroyal Chemical Company
Hong Feng Deng	1995-2000	M.Sc., Ph.D.	Suntory Pharmaceutical Research Laboratories, LLC
Robert Picone (U.S. Natl.)	1995-2001	Ph. D.	UConn NIH Training Grant
Yingfei Yang	1995-1996	M.Sc.	
Jun Zhao	1995-1998	M.Sc.	Arqule Pharmaceutical
Antonia Daven	1996		
Jianxin Guo	1996-		Current Student
Qian Liu	1996-2002	M.Sc.	Pfizer
Sriram Krishnaswami	1997		Purdue Pharmaceuticals
Xin-Zhong Lai	1996-		Current Student
Juliet Aberman (U.S. Natl.)	1998-1999		UConn Health Center
Ravi Chari (U.S. Natl.)	1998-		Current Student

Theresa Josef Bueno (U.S. Natl.)	1998-1999	M.Sc.	Medical Student
Arun Ramamurthy	1998-2001	M.Sc.	
Alok Kumar Singh	1999-2001	M.Sc.	Astra Zeneca
Indu Bharathan	2000-2002	M.Sc.	
Vineet Kumar	2000-2002	M.Sc.	
Wei Xu	2000-		Current Student
Jenine Anday	2001-		Current Student
Chen Li	2001-		Current Student
Keisha Winston	2001-		Current Student
Suma Yaddanapudi	2001-		Current Student
Jianhong Zhao	2002-		Current Student
Ying Pei	2002-		Current Student
Dianna (Sahakian) Kazolias	2002-		Current Student
Chandrika Rajan	2002-		Current Student

Undergraduate Students Advised Since 1995

Student	Years Attended	Honors
Theresa Josef (U.S. Natl.)	1995-1998	University Honors Student
Behrang Badii (U.S. Natl.)	1995-1996	
Tian Bo (U.S. Natl.)	1996-1997	University Honor Student
Roozbeh Badii (U.S. Natl.)	1996	
Antonia Daven (U.S. Natl.)	1996	
Pik-Yiu Chan	1997-2000	
Desiree Mullen (U.S. Natl.)	1997	
Christopher Colin Nocera (U.S. Natl.)	1997	
Mehdi Poursmail (U.S. Natl.)	1997-2000	
Carl Engmann (U.S. Natl.)	2000	Summer Research with NIDA 2000
Zachary Bergman (U.S. Natl.)	2000-	
Liz Lucini (U.S. Natl.)	2002-	
Ifeoma Uyanwune	2002-	

Postdoctoral Fellows Since 1995

Student	Dates Attended	Present Location
Vasiliki Abadji (U.S. Perm. Res.)	1992-1995	Elpen Pharmaceuticals (Greece)
Atmaram Khanolkar (U.S. Perm. Res.)	1992-1998	Rhodes Technologies
Wensheng Lang (U.S. Perm. Res.)	1993-1996	Johnson & Johnson
Xiangqun Xie (U.S. Perm. Res.)	1993-1995	UConn IMS
Yingkun Dai	1994-1995	

W. Adam G. Hill (U.S. Perm. Res.)	1994-1997	Schering-Plough Research Institute
Sonyuan Lin (U.S. Perm. Res.)	1994-1998	Admetric BioChem, Inc.
Ruoxi Lan	1995-1997	
Spiro Pavlopoulos	1996-1998	UConn Assistant Professor
Joel Kawakami (U.S. National)	1997-1998	Synaptic Pharmaceuticals
Nyan-Osorin Chingge	1999-2000	
Mehrnaz Kamal	1999-2001	
Spyros Nikas	1999-	Current Postdoc
Sonya Palmer (U.S. Natl.)	1999-2002	UConn Assistant Research Professor
Martin Sommer (U. S. Natl.)	1999-2000	Packard Instruments
Charlikeia Souli	1999-2000	MedoChemie, Cyprus
Fen-Mei Yao	1999-2001	Xenoport, Inc.
Yan Zhuang	1999-2001	Penn State Medical College
Alexander Zvonok	1999-2002	UConn Associate Research Scientist
Natalia Bitchevia	2000-2001	
Huaping Hu	2000-2001	3D Pharmaceuticals
Richard Mercier (U.S. Natl.)	2000-	Current Postdoc
Torben Neelands (U.S.Natl.)	2000	Bristol-Myers Squibb
Ganesh Thakur	2000-	Current Postdoc
Sirpa Filppula	2001-	Current Postdoc
C. R. Ramanathan	2001-	Current Postdoc
Peter McLaughlin	2001-	Current Postdoc
Rajesh Thotapally	2001-	Current Postdoc
Lionel Ayotte (U.S. National)	2002-	Current Postdoc
Greg Choi	2002-	Current Postdoc
Yingqun Mao	2002	
Lakshmipathi Pandarinathan	2002-2003	
Robert Picone (U.S. National)	2002-	Current Postdoc
JodiAnne Wood (U.S. National)	2002-	Current Postdoc
Sundararaman Varadarajan	2003-	Current Postdoc
Vijayabaskar Veerappan	2003-	Current Postdoc
Olszewska, Teresa	2003	Current Postdoc

Visiting Scholars Since 1998 (Fellowships obtained from countries of origin)

Student	Dates Attended	Fellowship
Pusheng Fan (China)	1994-1998	
YuShen Sha (China)	1997-1998	WHO Visiting Scholar
Weihua Yang (China)	1997-1998	
Thomas Mavromoustakos (Greece)	1999	Fulbright Scholar

Research Specialists Since 1995

Student	Dates Attended	Present Position
Magda Zan-Phillips (U.S. Natl.)	1994-1995	
Angela J. Lotsikas (NIH)	1995-1996	
Therapia Kourouli (Greece)	1996-2001	
Jesus Negreira (Spain)	1996-1997	
Joy Erickson (U.S. Natl.)	1997-2000	UConn Chemistry Department
Melissa Durstin (U.S. Natl.)	1998-1999	
Mario Volpi (U.S. Natl.)	1998-1999	Retired
Laura Jean Holdaway (U.S. Natl.)	1999	
Jun Yang (China)	2000	UConn Graduate Student-Nutrition Sciences
Pusheng Fan (China)	2001-	Current Research Assistant
Lynn Swezey (U.S. Natl.)	2002-	Current Research Assistant

Assistant Research Professors Since 1995

Student	Dates Attended	Present Position
DePing Yang (U. S. Perm. Res.)	1990-1995	College of Holy Cross
Jill Moring (U.S. Natl.)	1995-1997	
Diane Biegel (U.S. Natl.)	1998-	Current Assistant Research Professor
Atmaram Khanolkar (U.S. Perm. Res.)	1998-2000	Rhodes Technologies
Spiro Pavlopoulos	1998-2002	Assistant Research Professor
Mufeed M. Basti (U.S. Natl.)	2000-2001	North Carolina A & T University
Sonya Palmer (U.S. Natl.)	2002	

Minority Activities:

Majority-Minority Interactive Research Program

- Collaboration between the University of Connecticut, Florida A&M University, a member of the Historically Black Colleges and Universities, and the University of Arizona

- Special summer internship program involving in "hands on" research activities in the biomedical sciences
- First enhancement program of its kind in the country implemented through NIDA

NIDA Sponsored Collaboration with North Carolina A&T University (NCAT), a minority institution

Summer Research with NIDA 2000

- Designed to facilitate research placements for minority undergraduate students
- Host to a student who worked in my lab collecting data, conducting research experiments and analyzing data

NIH Minority Fellowships

- Undergraduate Research Grant Supplement, (1996-1998), Teresa Josef
- Minority Postdoctoral Fellowship, (2000 - 2002), Sonya Palmer

External Scientific Advisory Committee of the Minority Biomedical Research Program at NIH

- Member

NIH Special Populations Research Development Effort

- Minority-mentoring program allowing new investigators/trainees to submit draft grant proposals to NIH
- Member of a panel of senior scientists who act as mentors providing recommendations and advice for improvement

Minority Individuals Advised Since 1996

Student	University Attended	Dates sponsored
Theresa Josef	University of Connecticut	1996-1998
Wang Zhang	Florida A & M University	Summers 1997, 1998
Bereket Mochona	Florida A & M University	Summer 1999
Tefamichael Gebrekidan	Florida A & M University	Summer 1999
Mufeed Basti	North Carolina A&T	Summers 2000, 2001
Carl Engmann	University of Connecticut	Summer 2000
Sonya Palmer	University of Connecticut	2000-present
Keisha Winston	University of Connecticut	2001-present

Minority High School Students Since 1998

Student	Dates Attended
Anthony Osorio	1998
Lori Pratt (High School Teacher)	1999

Invited Presentations Since 1998:

Makriyannis, A., (1998), *In vivo* imaging of cannabinoid receptors in mammalian brains. *Keynote Speaker at the American Association of Pharmaceutical Scientists' Eastern Regional Meeting*, Parsippany, NJ.

Makriyannis, A., (1998), Cannabimimetic Therapeutic Targets. *Invited Presentation at Regional American Chemical Society Meeting*, Middlebury, CT.

- Makriyannis, A., (1998), Cannabinoid Sites as Therapeutic Targets. *Invited Presentation at Boston University, School of Medicine, Boston, MA.*
- Makriyannis, A., (1998), Cannabinoid Sites as Therapeutic Targets. *Invited Presentation at the Virginia Commonwealth University NIDA Seminar Series. Richmond, VA.*
- Makriyannis, A., (1998), *Invited Presentation at NIH Neuroscience Meeting: Bridges to Drug Abuse Research for Minority Biomedical Scientists. Los Angeles, CA.*
- Makriyannis, A., (1998), How to Design Therapeutic Medications. *Invited Presentation at Fudan University. Shanghai, China.*
- Makriyannis, A., (1998), The Road to Drug Discovery. *Invited Presentation at the College of Pharmacy, Second Military Medical University. Shanghai, China.*
- Makriyannis, A., (1998), The Design and Synthesis of Novel Cannabinergic Targets. *Invited Presentation at Shanghai Institute of Organic Chemistry, Chinese Academy of Science. China.*
- Makriyannis, A., (1998), The Cannabinoid System in Drug Discovery. *Invited Presentation at Institute of Materia Medica- Chinese Academy of Medicine. Shanghai, China.*
- Makriyannis, A., (1998), The Role of Cell Membranes in Drug Action. *Invited Presentation at Qing Hua University. Shanghai, China.*
- Makriyannis, A., S. J. Gatley, R. Lan, N. D. Volkow and Q. Liu, (1998), The use of spect imaging to study cannabinoid receptors in mammalian brains. *Invited Presentation at the International Cannabinoid Research Society. Palais des Congres, La Grande Motte, France.*
- Makriyannis, A., (1999), Cannabinoid sites as novel therapeutic targets. *Invited Presentation at University of Cyprus. Nicosia, Cyprus.*
- Makriyannis, A., (1999), Cannabinoid sites as novel therapeutic targets. *Invited Presentation at Boston University, School of Medicine. Boston, MA.*
- Makriyannis, A., (1999), Cannabinoid sites as novel therapeutic targets. *Invited Presentation at the 8th Cyprus Conference on New Methods in Drug Research. Limassol, Cyprus.*
- Makriyannis, A., (1999), Cannabinoid sites as novel therapeutic targets. *Invited Presentation at the American Association of Pharmaceutical Scientists Annual Meeting. New Orleans, LA.*
- Makriyannis, A., (1999), Design and development of new cannabimimetic compounds for potential therapeutic use. *Invited Presentation at the FASEB Summer Research Conference. Copper Mountain, CO.*
- Makriyannis, A., (1999), New Therapeutic Agents, The Road to Discovery. *Keynote Speaker at the 2nd Annual BEACON SYMPOSIUM Drug Discovery, Design and Delivery Symposium.*
- Makriyannis, A., (1999), Cannabinoid Sites as Novel Therapeutic Targets. *Invited Presentation, NIDA IRP Special Seminar.*
- Makriyannis, A., (1999), Cannabinoid Sites as Novel Therapeutic Targets. *Invited Presentation at the American Chemical Society Regional Meeting, Boston, MA.*
- Makriyannis, A., (1999), New Approaches in the Biotechnology Era. *Invited Presentation at the University of Connecticut Health Center "Strategies for Drug Design." Farmington, CT.*
- Makriyannis, A., (1999), Cannabimimetic Therapeutic Targets. *Invited Presentation at Harvard Medical School-McLean Hospital. Belmont, MA.*

- Makriyannis, A., (February 2000), Endocannabinoid Active Sites as Therapeutic Targets. *Invited Presentation at RBI Sigma*, Natick, MA.
- Makriyannis, A., (March 2000), Probing and imaging cannabimimetic sites. *Invited Presentation at the American Chemical Society National Meeting*. San Francisco, CA.
- Makriyannis, A., (March 2000), Cannabimimetic sites as therapeutic targets. *Invited Presentation at the Yale Psychosis Research Seminar Series*. New Haven, CT.
- Makriyannis, A., (April 2000), Endocannabinoids; a promising terrain for drug discovery. *Invited Presentation at the University of Connecticut Health Center's Cellular and Molecular Pharmacology Seminar Series*. Farmington, CT.
- Makriyannis, A., (April 2000), *Invited Presentation at the University of Connecticut Physiology and Neurobiology Seminar Series*, Storrs, CT.
- Makriyannis, A., (July 2000), Endocannabinoid proteins as potential therapeutic targets. *Invited Presentation at Synaptic Pharmaceutical Corporation*. Paramus, NJ.
- Makriyannis, A., (October 2000), Synthesis of compounds acting on the endocannabinoid system. *Invited Presentation at the International Symposium: New Perspectives in the Therapeutic Uses of Endocannabinoids*. Madrid, Spain.
- Makriyannis, A., (December 2000), Endocannabinoid proteins as novel targets in drug discovery. *Invited Presentation at the University of Minnesota*, Minneapolis, MN.
- Makriyannis, A., (December 2000), Endocannabinoid Biochemistry: A Road to Drug Discovery. *Invited Presentation at the University of Connecticut, School of Pharmacy All-School Seminar Series*, Storrs, CT.
- Makriyannis, A., (December 2000), Endocannabinoid proteins as novel targets in drug discovery. *Invited Presentation at the Pacificchem Joint American and Japanese Chemical Society 2000 Conference*, Honolulu, HI.
- Makriyannis, A., (March 2001), Medications Development for Drugs of Abuse using Target-Based Drug Design. *Invited Presentation at Harvard Medical School-McLean Hospital*, Belmont, MA.
- Makriyannis, A., (April 2001), Endocannabinoid proteins as novel targets in drug discovery. *Invited Presentation at Wayne State University*, Detroit, MI.
- Makriyannis, A., (April 2001), Molecular Features of the Endocannabinoid Biochemical System. *Invited Presentation at the University of Connecticut Chemistry Colloquium*, Storrs, CT.
- Makriyannis, A., (August 2001), Novel Therapeutic Opportunities in Cannabinoid Research. *Invited Presentation at Abbott Laboratories*, Chicago, IL.
- Makriyannis, A., (August 2001), Cannabimimetic Sites as Therapeutic Targets. *Invited Presentation at the American Chemical Society National Meeting*, Chicago, IL.
- Makriyannis, A., (August 2001), Ligands for Cannabinergic Sites. *Invited Presentation at NIDA Symposium on Cannabinoids: Chemistry and Biology Meeting*, Bethesda, MD.
- Makriyannis, A., (November 2001), Endocannabinoid Proteins as Therapeutic Targets. *Invited Presentation at AstraZeneca R&D*, Montreal, Canada.
- Makriyannis, A., (February 2002), Studies on the Endocannabinoid System. *Invited Presentation at the National Institute of Mental Health*, Bethesda, MD.

- Makriyannis, A., (March 2002), Endocannabinoid Therapeutic Targets. *Invited Presentation at Purdue University, Indianapolis, IN.*
- Makriyannis, A., (April 2002), Endocannabinoid Proteins and Ligands. *Invited Presentation at University of Louisville, Louisville, KY.*
- Makriyannis, A., (May 2002), Ligand-based Structural Biology of GPCRs. *Invited Presentation at the NIDA Symposium on Structural Biology & Structural Genomics/Proteomics, Bethesda, MD.*
- Makriyannis, A., (June 2002), The Endocannabinoid System as a Novel Target in Drug Discovery. *Invited Presentation at the International Behavioral Neuroscience Society 11th Annual Meeting, Capri, Italy.*
- Makriyannis, A., (September 2002), Cannabinoid Proteins as Therapeutic Targets. *Invited Presentation at the International Symposium on Medicinal Chemistry, Barcelona, Spain.*
- Makriyannis, A., (October 2002), Approaches to Drug Discovery. *Invited Presentation at the Informal Scientific Seminar Series at the University of Connecticut Avery Point Campus, Groton, CT.*
- Makriyannis, A., (October 2002), Cannabinergic Targets in Drug Abuse Research. *Invited Presentation at a Mini-Symposium on Current Trends in Drug Abuse Research, Storrs, CT.*
- Makriyannis, A., (November 2002), Advances in Endocannabinoid Research. *Invited Presentation at the American Association of Pharmaceutical Scientists Annual Meeting, Toronto, Ontario, Canada.*
- Makriyannis, A., (November 2002), Ligand-Based Structural Biology. *Invited Presentation at the American Association of Pharmaceutical Scientists Annual Meeting, Toronto, Ontario, Canada.*
- Makriyannis, A., (December 2002), The Cannabinergic System as a Target for Therapeutic Drug Discovery. *Invited Presentation at the Marine Sciences Fall 2002 Seminar Series at the University of Connecticut Avery Point Campus, Groton, CT.*
- Makriyannis, A., (December 2002), Cannabinergic Targets in Drug Discovery. *Invited Presentation at the Center for Genetics and Molecular Medicine Fall 2002 Seminar Series at the University of Louisville, Louisville, KY.*
- Makriyannis, A., (February 2003), The Cannabinergic System as an Avenue for Drug Abuse Medications. *Invited Presentation at the National Institute on Drug Abuse, Rockville, MD.*
- Makriyannis, A., (March 2003), The Cannabinergic System as a Therapeutic Target: Ligand-Based Structural Biology. *Invited Presentation at Northeastern University, Boston, MA.*
- Makriyannis, A., (April 2003), Ligand-Based Structural Biology of Drug Targets. *Invited Presentation for the University of Connecticut School of Pharmacy Advisory Board, Storrs, CT.*
- Makriyannis, A., (April 2003), Novel Cannabinergic Ligands. *Invited Presentation at the American Society for Pharmacology and Experimental Therapeutics, San Diego, CA.*
- Makriyannis, A., (May 2003), Ligand-Based Structural Biology: Searching the Cannabinergic System. *Invited Presentation at the Crompton Corporation Chapter of Sigma Xi, Middlebury, CT.*
- Makriyannis, A., (July 2003), Basic Science Research in Drug Abuse & Addiction, *Invited Presentation for NIDA's Southern Africa Initiative, Cape Town, South Africa.*
- Makriyannis, A., (July 2003), Cannabinergic Sites of Action, *Invited Presentation for Center for Vascular Biology Seminar Series at the University of Connecticut Health Center, Farmington, CT.*

Publications:

- Smisssman, E. E. and A. Makriyannis, (1970), Some solvent effects in the NMR spectra of cyano compounds. *J. Pharm. Sci.*, **59**, 1186.
- Smisssman, E.E., A. Makriyannis and E.J. Walaszek, (1970), Synthesis and pharmacology of n-cyano-(β -arylethyl) amines. *J. Med. Chem.*, **13**, 640.
- Makriyannis, A., J. S. Frazee and J.W. Wilson, (1972), 3-Phenyl-5-quinolinemethanol antimalarials. *J. Med. Chem.*, **16**, 118-122.
- Makriyannis, A., R. F. Sullivan and H. G. Mautner, (1972), Conformational relationships between analogs of acetylcholine and those of local anesthetics in solution. *Proc. Natl. Acad. Sci.*, **69**, 3416.
- Makriyannis, A., W. H. H. Gunther and H. G. Mautner, (1973), Selenol esters as specific reagents for the acylation of thiol groups. *J. Am. Chem. Soc.*, **95**, 8403-8406.
- Smisssman, E. E. and A. Makriyannis, (1973), Azodicarboxylic acid esters as dealkylating agents. *J. Org. Chem.*, **38**, 1652.
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