

# Curriculum Vitae of Salvatore D. Lepore

## EDUCATION

Post Doctoral Fellow (2000), Eli Lilly and Company (with Michael R. Wiley), Indianapolis, IN  
Ph.D. Organic Chemistry (1997), Purdue University (with Merritt B. Andrus), West Lafayette, IN  
B.S. Chemical Engineering *cum laude* (1992), University of South Florida, Tampa, FL

## PROFESSIONAL EXPERIENCE

**Associate Professor** – FAU Department of Chemistry & Biochemistry. August 2006 - present.

**Assistant Professor** – FAU Department of Chemistry & Biochemistry. 2000 – 2006.

## PUBLICATIONS

Maity, P.; Lepore, S.D. Selective One-Pot Synthesis of Allenyl and Alkynyl Esters from  $\beta$ -Ketoesters. *J. Org. Chem.* **2008** (accepted)

Lepore, S.D.; Mondal, D.; Li, S.Y.; Bhunia, A.K. Stereoretentive Halogenations and Azidations with Titanium(IV) Enabled by Chelating Leaving Groups *Angew. Chem. Int. Ed.* **2008**, 47 (in press).

Lepore, S.D.; Mondal, D. Recent Advances in Heterolytic Nucleofugal Leaving Groups *Tetrahedron* **2007**, 63, 5103-5122.

Lepore, S.D.; Bhunia, A.K.; Mondal, D.; Cohn, P.C.; Lefkowitz, C. Rapid Conversion of Hindered Arylsulfonates to Alkyl Chlorides with Retention of Configuration. *J. Org. Chem.* **2006**, 71, 3285.

Silvestri, M.A.; He, C.; Khoram, A.; Lepore, S.D. Synthesis of Methyl 2-Oxo-5-Vinyl-2,5-Tetrahydrofuran-3-Carboxylate. *Tetrahedron Lett.*, **2006**, 47 1625.

Lepore, S.D.; Bhunia, A.K.; Cohn, P. Arylsulfonate Based Nucleophile Assisting Leaving Groups (NALGs). *J. Org. Chem.* **2005**, 70, 8117.

Silvestri, M.A.; Bromfield, D.C.; Lepore, S.D. Michael-Stork Addition of Cyclopentyl Enamine to Allenyl Ketones and Esters. *J. Org. Chem.* **2005** 70, 8239.

Lepore, S.D.; Khoram, A.; Bromfield, D.C.; Cohn, P.; Jairaj, V.; Silvestri, M.A. Studies on the Manganese Mediated Isomerization of Alkynyl Carbonyls to Allenyl Carbonyls. *J. Org. Chem.* **2005**, 70, 7443.

Lepore, S.D.; He, Y.J. Deconjugative Conversion of  $\alpha$ -Alkynyl Esters to  $\alpha,\alpha$ -Disubstituted  $\beta$ -Alkynyl Esters. *J. Org. Chem.* **2005**, 70, 4546.

Lepore, S.D.; He, Y.J.; Damisse, P. Studies on the Base-Promoted Conversion of Conjugated Alkynyl Esters to  $\alpha$ -Substituted  $\alpha$ -Allenyl Esters. *J. Org. Chem.* **2004**, 69, 9171.

Lepore, S.D.; He, Y.J. Use of Sonication for the Coupling of Sterically Hindered Substrates in the Phenolic Mitsunobu Reaction. *J. Org. Chem.* **2003**, 68, 8261.

Lepore, S.D.; Wiley, M.R. Application of Aryloximes as Solid-Phase Ketone Linkers. *Organic Lett.* **2003**, 5, 7.

Lepore, S.D.; Schacht, A.L.; Wiley, M.R. Preparation of 2-Hydroxybenzamidines from 3-Aminobenzisoxazoles. *Tetrahedron Lett.* **2002**, 43, 8777.

Zhang, Z.; Lepore, S.D. Synthesis of cyclopentadienylmanganese tricarbonyl resins as potential olefin traceless supports. *Tetrahedron Lett.* **2002**, 43, 7357.

Lepore, S.D. The use of 18-crown-6 as an ionizable phase label for the expedited synthesis of small-molecules. *Tetrahedron Lett.*, **2001**, 42, 6437.

Lepore, S.D.; Wiley, M.R. Studies on the Synthetic Compatibility of Aryloxime Linkers in the Solid Phase Synthesis of 3-Aminobenzisoxazoles. *J. Org. Chem.* **2000**, 65, 2924.

Lepore, S.D.; Wiley, M.R. Use of the Kaiser Oxime Resin in the Solid Phase Synthesis of 3-Aminobenzisoxazoles. *J. Org. Chem.* **1999**, 64, 4547.

Andrus, M.B.; Lepore, S.D.; Turner, T.M. Total Synthesis of Stipiamide and Designed Polyenes as New Agents for the Reversal of Multidrug Resistance. *J. Am. Chem. Soc.*, **1997**, 119, 12159.

Andrus, M.B.; Lepore, S.D.; Sclafani, J.A. Selective Dihydroxylation of Non-Conjugated Dienes in Favor of the Terminal Olefin. *Tetrahedron Lett.*, **1997**, 38, 4043.

Andrus, M.B.; Lepore, S.D. Synthesis of Stipiamide and a New Multidrug Resistance Reversal Agent, 6,7-Dehydrostipiamide. *J. Am. Chem. Soc.*, **1997**, 119, 2327.

Andrus, M.B.; Lepore, S.D. Asymmetric Additions to Dichlorophenyldioxane, a New Chiral Acetal. *Tetrahedron Lett.*, **1995**, 36, 9149.

**BOOK CHAPTERS**

Li, S. Y.; Lepore S.D. 2-(2-methoxyethoxy)-ethyl 2-(chlorosulfonyl)-benzoate. *Encyclopedia of Reagents for Organic Synthesis* **2008** (in press)

**PATENTS**

Lepore, S.D. Preparation of reagents for nucleophile chelation assisting leaving groups. *WO 2006060142* (FAU, **2006**)

Argade, A.B.; Goodson, T.; Herron, D.K.; Joseph, S.; Lepore, S.D.; Marquart, A.L.; Masters, J.J.; Mendel, D.; Merritt, L.; Ratz, A.M.; Smith, G.F.; Tebbe, A.L.; Wiley, M.R.; Yee, Y.K. Preparation of (hetero)aromatic ether amides as inhibitors of Factor Xa and/or thrombin. *WO 2006057845* (Eli Lilly, **2006**)

Lepore, S.D.; Wiley, M.R. Solid phase synthesis of ketone group containing molecules. *WO 2001036362* (Eli Lilly, **2001**)

Wiley, M.R.; Lepore, S.D. Use of aryloxime linkers in the solid-phase synthesis of 3-amino-1,2-benzisoxazoles and polycyclic heterocyclic analogs. *WO 2000027627* (Eli Lilly, **2000**)

Wiley, M.R.; Lepore, S.D. Preparation of amino-benzisoxazole compounds and libraries as thrombin inhibitors. *WO 2000027199* (Eli Lilly, **2000**)

**PRESENTATIONS**

(including 11 invited lectures)

Maity, P.; Lepore, S.D. Reductive Aldol as a Novel Method for Substituted [3.n.1] Bicycle Formation: Progress Toward the Total Synthesis of Vitisinol D. Abstracts of Papers, 236th ACS National Meeting, Philadelphia, PA, August (**2008**)

Lepore, S.D.; Maity, P.; Sappidi, R. Selective One-Pot Synthesis of Allenyl and Alkynyl Esters: Applications to Mukaiyama-type Additions to Form Nonracemic 2-Alkynyl-3-hydroxy Esters. Abstracts of Papers, 236th ACS National Meeting, Philadelphia, PA, August (**2008**)

Mondal, D.; Li, S.Y. Lepore, S.D. Stereoretentive and Rapid Synthesis of Secondary Halides and Azides using New Chelating Leaving Groups with Titanium (IV) Reagents. Abstracts of Papers, 236th ACS National Meeting, Philadelphia, PA, August (**2008**)

Lepore, S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). Lecture for the Scripps Research Institute (La Jolla) November (**2007**)

Lepore, S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). *Invited Lecture* for University of California at San Diego, November (**2007**)

Lepore, S.D. Development of New Leaving Groups. *Invited lecture and short course* for the University (degli Studi) of Catania (Sicily) October (**2007**)

Lepore, S.D.; Mondal, D.; Li, S. New Titanium (IV) Reactions Using Nucleophile Assisting Leaving Groups (NALGs): Stereoretentive Alkyl Halide and Azide Syntheses. European Symposium on Organic Chemistry (ESOC) at University College Dublin, July (**2007**)

Lepore, S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). Lecture for Eli Lilly and Co. April (**2007**)

Lepore, S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). *Invited lecture* for Purdue University Chemistry Department, March (**2007**)

Lepore, S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs), Eli Lilly Seminar Series, March (**2007**)

Lepore, S.D.; Mondal, D.; Li, S. Accelerated reactions using nucleophile assisting leaving groups (NALGs): Applications to stereospecific alkyl halide synthesis. 233rd ACS National Meeting, Chicago, IL, March (**2007**)

Lepore S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). *Invited lecture* for Moffitt Cancer Center, November 22 (**2006**)

Lepore S.D. New Synthesis Methods Involving Allenyl Carbonyl Compounds and Development of Nucleophile Assisting Leaving Groups (NALGs). *Invited lecture* for University of Rome (La Sapienza), September 29 (**2006**)

Lepore, S.D.; Mondal, D.; Cohn, P.C.; Li, S. Accelerated Reactions Using Nucleophile Assisting Leaving Groups (NALGs): Applications to Stereospecific Alkyl Halide Synthesis. Ischia Advanced School of Organic Chemistry, Ischia, Naples (Italy), September 16-21 (**2006**)

Lepore S.D. Development of New Leaving Groups and New Methods Involving Allenyl Carbonyl Compounds. *Invited lecture* for University of Florida Chemistry Department Organic Seminar Series, January 26 (**2006**)

Lepore S.D.; Bhunia, A.K. Arylsulfonate based nucleophile assisting leaving groups. Pacificchem, Honolulu, HI, December (2005)

Lepore, S.D., Bhunia, A.K.; Cohn P. Design of arylsulfonate based nucleophile assisting leaving groups. *Invited lecture* for NIH (Mental Health), August (2005)

Lepore S.D.; Bhunia, A.K. Arylsulfonate based nucleophile assisting leaving groups. 230th ACS National Meeting, Washington DC, August (2005)

Lepore S.D.; Bhunia, A.K.; Cohn P. Arylsulfonate based nucleophile assisting leaving groups. *Invited lecture* for ACS Florida Annual Meeting and Exhibition (FAME), May (2005)

Lepore S.D. Bhunia, A.K.; Nucleophile Assisting Leaving Groups (NALGs). *Invited lecture* for Florida State University Chemistry Department Organic Seminar Series, December (2004)

Lepore, S.D. New Methods for the Preparation of Highly Functionalized Allenyl Carbonyl Compounds (Oral Presentation). FAU Center for Molecular Biology and Biotechnology (CMBB) October (2004).

Bromfield, D.C.; Silvestri, M.A.; Lepore, S.D. New chemical methods for the synthesis of geniposidic acid, an antiviral marine natural product (Poster Presentation). Florida Marine Biotechnology Conference October (2004)

Silvestri, M.A.; Lepore, S.D. The Development of a Novel Diels-Alder Reaction Involving Allenyl Esters as Heterodienes. XI International Symposium of Marine Natural Products (Poster Presentation), Sorrento, Italy, September (2004)

Lepore, S.D. New methods for the preparation of allenyl esters and their application in hetero-Diels-Alder reactions. Annual Organic Faculty of Florida (OFF) Conference (Oral Presentation), Orlando, FL, March (2004)

Lepore, S.D. and He, Y. Synthesis of  $\alpha$ -tributylstannyl- $\alpha$ -allenyl esters and their application in the Lewis acid mediated reaction with aldehydes. South Eastern Regional Meeting of the American Chemical Society (Oral Presentation), Atlanta, GA, September (2003)

Lepore, S.D. and He, Y. Studies on the base-promoted conversion of conjugated alkynyl esters to  $\alpha$ -substituted  $\alpha$ -allenyl esters. South Eastern Regional Meeting of the American Chemical Society (Oral Presentation), Atlanta, GA, September (2003)

Bromfield, D.C.; Jairaj, V.; Lepore, S.D. Studies on the Manganese-Mediated Isomerization of Alkynyl Carbonyls to Allenyl Carbonyls (Poster Presentation). BioTech 2003.

He, Y.; Lepore, S.D. Base-promoted Alkylation Reactions of Alkynyl Esters (Poster Presentation). BioTech 2003.

Lepore, S.D. New Methods for the Preparation of Highly Functionalized Allenyl Carbonyl Compounds. *Invited Lecture* for Barry University Science Seminar Series (2003)

Lepore, S.D.; Vinod, J.; Tatalovich, J.E. Studies towards the total synthesis of Isochromophilone II: Intramolecular Diels-Alder reactions of allenyl carbonyls. 223rd ACS National Meeting, Orlando, FL, April (2002)

Lepore, S.D.; Zongren, Z. Studies toward the development of cyclopentadienylmanganese tricarbonyl resins as traceless olefin linkers. 223rd ACS National Meeting, Orlando, FL, April (2002)

Jairaj, V.; Lepore, S.D. Studies Toward the Total Synthesis of Isochromophilone II: Intramolecular Diels-Alder Reactions of Allenyl Carbonyls (Poster Presentation). BioTech 2002

Zhang, Z.; Lepore, S.D. Studies towards the development of a cyclopentadienylmanganese tricarbonyl resin as a traceless olefin linker (Poster Presentation). BioTech 2002

Lepore, S.D.; Jairaj, V.; Tatalovich, J.E. Study of the electronic and steric effects of the reaction of hydroxyl-protected-1-lithioalkynols with several electrophiles. South Eastern Regional Meeting of the American Chemical Society (Poster Presentation), Savannah, GA, September (2001)

Lepore, S.D. Development of New Solid-Phase Methods for the Synthesis of Small Molecules. *Invited Lecture* for Florida International University Chemistry Department Seminar Series (2001)

Lepore, S.D. Studies Toward the Total Synthesis of Isochromophilone II - an HIV Entry Inhibitor (Oral Presentation). CMBB (2001)

Lepore, S.D. Development of New Solid-Phase Methods for the Synthesis of Small Molecules (Oral Presentation). CMBB (2000)

## RESEARCH GRANTS AWARDED

(Lepore is PI on all grants listed, total = \$1,639,000)

### 2008

"Synthesis of a highly chlorinated anti-tumor marine natural product with concomitant development of new catalytic Ti(IV) reactions" (10/08 – 4/10)

Agency: Gobierno de Navarra #72704093N

Direct Costs: 45,165 Euros

**2005**

“Synthesis of azaphilone analogs as HIV entry inhibitors” (6/05 – 3/09)

Agency: NIH (NIGMS), S06 GM073621-01

Direct Costs: \$545,000 Indirect Costs: \$223,500

**2004**

1. “Synthesis of quinazoline derivatives” (9/04 – 6/05)

Agency: The Scripps Research Institute (Florida)

Direct Costs: \$14,592 Indirect Costs: \$5,909

2. “Chemical synthesis of sucrose derivatives and subsequent antimicrobial testing” (10/04 – 6/06)

Agency: Florida Crystals Corporation

Direct Costs: \$20,000 Indirect Costs: \$8,100

3. Chemical synthesis of “Product C” (8/03 – 7/04)

Agency: Florida Crystals Corporation

Direct Costs: \$9,700 Indirect Costs: \$2,425

4. “Development of New Reactions for the Synthesis of anti-HIV Compounds” (1/04 – 12/04)

Agency: FAU Research Enhancement Award

Direct Costs: \$15,000 Indirect Costs: none

**2003**

1. “Synthesis of Pyran Bicyclic Natural Products” (5/1/03 – 4/30/05)

Agency: NIH (NIGMS), R15 GM067635-01

Direct Costs: \$100,000 Indirect Costs: \$39,000

2. “Solid-Phase Approach to the Synthesis of C11 PET Tracers” (3/03 – 2/06)

Agency: NIH (NIMH), R03 MH66963-01

Direct Costs: \$139,000 Indirect Costs: \$55,000

3. “Purchase of an NMR for Teaching Creative Problem Solving Skills in the Chemistry Laboratory Program at FAU” (9/03 – 8/05)

Agency: NSF (DUE), 0311369

Direct Costs: \$133,620 FAU-Match: \$116,520

Indirect Costs: \$8,990

4. The following external grant application was approved for funding by the NIH but could not be awarded due to NIH’s policy of only allowing PI’s to hold one active AREA (R15) grant at a time: “Synthesis of Azaphilone Analogs as HIV Entry Inhibitors”

Agency: NIH (NIAID)

Direct Costs: \$100,000 Indirect Costs: \$39,000

5. “Chemical synthesis of simplified analogs of verbenalloside an anti-tumor agent” (9/03 – 8/05)

Agency: FAU Center of Excellence

Direct Costs: \$70,000 Indirect Costs: none

**2002**

1. “Manganese  $\eta^2$ -Bond as a Solid-Phase Traceless Linker for the Expedited Synthesis of Olefins” (summer fellowship) (5/02 – 8/02)

Agency: ACS PRF (Type G), 36633-G1

Direct Costs: \$8,000 Indirect Costs: none

2. “Enantioselective Conversion of Alkynes to Allenes: Application to the Synthesis of Anti-HIV Compounds” (3/02 – 2/03)

Agency: Florida Atlantic University – Research Initiation Award

Direct Costs: \$5,000 Indirect Costs: none

3. “Sulfonate resins for the synthesis of  $^{18}\text{F}$ -labeled PET tracers” (6/02 – 5/06)

Agency: NIH (PO # 263-MD-212362)

Direct Costs: \$42,186 Indirect Costs: \$9,214

4. Donation of methylcyclopentadienylmanganese tricarbonyl (MMT)

Agency: Ethyl Corporation

Estimated value: \$12,000 Indirect Costs: none

**2001**

1. “Manganese  $\eta^2$ -Bond as a Solid-Phase Traceless Linker or the Expedited Synthesis of Olefins” (9/01 – 8/03)

Agency: ACS PRF (Type G), 36633-G1

Direct Costs: \$25,000 Indirect Costs: none

2. “Synthesis and SAR Study of Isochromophilone II – an HIV Prophylactic Agent” (7/01 – 6/02)

Agency: Florida Atlantic University – Presidential Research Development Award

Direct Costs: \$25,000 Indirect Costs: none

3. “Development of a New Method for the Solid-Phase Synthesis of Medicinally-Relevant Alkenes” (3/01 – 2/02)

Agency: FAU – Research Innovation Award

Direct Costs: \$5,000 Indirect Costs: none

**COURSES TAUGHT and DEVELOPED****Undergraduate Courses**

- CHM 2200 - Introduction to Organic Chemistry (new course, taught one semester, ~20 students)
- CHM 2210 - Organic Chemistry I (taught 5 semesters, ~ 250 students)
- CHM 2211 - Organic Chemistry II (taught one semester, ~150 students)
- CHM 4220 - Organic Chemistry III (new course, taught 4 semesters, ~ 10 students)

**Graduate Courses**

- CHM 6380 - Advanced Organic Chemistry (taught 4 semesters, ~ 15 students)
- CHM 6730 – Synthesis and Characterization (new course, 6 semesters, ~15 students)
- CHM 5944 – Introduction to Chemical Research (taught 2 semesters, ~12 students)

**SERVICE****Departmental** (Chemistry & Biochemistry)

Graduate Program Committee Chair (2006-2008)

Graduate Admissions Committee Chair (2003-2006)

Instrumentation Committee (2007-present)

**College** (of Science)

College Graduate Programs Committee (2007 – present)

**University**

University Intellectual Property Committee (2005 – present)

Scripps Economic Working Group Committee (2005)

Chair of University Faculty Council Library Committee (2003-present).

**Professional**

## Manuscript Reviews

*Letters in Organic Chemistry* (2 manuscripts)*Organic & Biomolecular Chemistry* (1 manuscript)*Organic Letters* (2 manuscripts)*Tetrahedron Letters* (7 manuscripts)*Tetrahedron* (4 manuscripts)*Perspectives in Medicinal Chemistry* (5 manuscripts)

## Proposal Reviews

*American Cancer Society* (6 proposals)*National Science Foundation* (2 proposals)*Oak Ridge Associated Universities* (2 proposals)*American Chemical Society PRF* (4 proposals)**Community***Palm Beach Post* (6/20/05) "FAU hopes \$4 million grant boosts research reputation" by Kimberly Miller*Sun-Sentinel* (3/6/05) "Recent FAU graduate seeks chance to 'expand my mind'" by Glenn Singer

Lecture presentation to the Science National Honor Society at C.W. Flanagan High School (Pembroke Pines, FL) (2003 &amp; 2004)

Lecture presentation to High School Science Teachers at Boynton Beach Community High (2003)

Palm Beach County Science Fair Judge (2002 &amp; 2004)

*Miami Herald* (9/24/03) "Bush gives research a \$10-million boost" by Jasmine Kripalani

Appeared on the local television news (News Channel 5) on 7/18/02 in an interview with Jean Apodaca. The brief science-related segment concerned the drug gamma hydroxybutyrate (GHB).

**RELATED PROFESSIONAL EXPERIENCE****Associate Editor** - *Perspectives in Medicinal Chemistry* (Libertas Academica), open access journal. 2006 - present**Chemical Consultant** for Unison Pharmaceuticals, MCS Biomedical, Florida Crystals, Sunol Biomolecular, and Xcovery. 2003 – Present**Chief Scientist** of Custom Synthesis Incorporated (CSI). 2004 – 2006.**Patent Consultant** for Florida Atlantic University assisting Akerman Senterfitt Attorneys at Law. 2003.**Chemical Engineer** – Delta Environmental Consultants, Inc. Tampa, FL 1991- 93.**GRADUATE STUDENT & POSTDOC GUIDANCE****Current Doctoral Students**

Deboprosad Mondal, Songye Li, Pradip Maity, Ravinder Reddy

**Current Masters and Undergraduate Students**

Chang He (MS), Nicole Windmon, Tegan Lavoie, Rian Meningely, Hana Razack-Kasam, Shane Williams

**Former Graduate Students**

Yuanjun He (PhD) (Scripps Florida postdoctoral fellow with Chris Liang)

Anita Khoram (MS) (Chemist at Florida Surface Chemists)

Deborah Bromfield (MS) (Doctoral student at Univ. of North Carolina Chapel Hill)

Pamela Cohn (MS) (Doctoral student at Univ. of Florida)

### **Former Postdoctoral Fellows**

Drs. Maximillian Silvestri, Anjan Bhunia, Zongren Zhang, Vinod Jairaj, and Xi Chen

### **HONORS**

FAU Researcher of the Year Award (2006)  
(Assistant Professor Category – one award given)

Nominee for the FAU Distinguished Teacher of the Year Award (2001, 2002 and 2003)

FAU Multicultural Premedical Society Teaching Appreciation Award Recipient (2002)

FAU Presidential Research Award (2001)  
(Only two awards given across all faculty ranks)

Purdue Research Foundation Graduate Fellow (1994-1996)

Dow Chemical Outstanding Junior of the Year Award Recipient (1991)

Tau Beta Pi National Engineering Honor Society (1991)

National Science Foundation Undergraduate Summer Research Grantee (1991)

University of South Florida Faculty/Staff Scholarship Recipient (1990)