DR. ELAINE BENAKSAS SCHWARTZ
Assistant Professor

Schmid College of Science and Technology
Chemistry, School of Earth and Environmental Sciences

PERSONAL STATEMENT

I have devoted my career thus far to scientific research and development, and the education and direction of burgeoning scientists, both in academic and corporate settings. At this juncture, I have returned to the academic world, focusing my energy and experience primarily to the education of university students. By effectively imparting chemistry curriculum standards while ensuring students become competent in the language and applications of chemistry, my objective is to encourage nascent chemists/scientists as well as develop knowledgeable consumers. Always striving for excellence, it is my hope to be able to provide the highest standards in instruction and services to university students and administration.

EDUCATION

University of California, Los Angeles, Ph.D. Organic Chemistry, 1989

University of California, Los Angeles, B.S. Chemistry, 1982

ACADEMIC EXPERIENCE

2011- Chapman University, Department of Chemistry, Assistant Professor of Chemistry

Instructor for undergraduate chemistry courses, primarily General Chemistry and co-requisite laboratory classes including curriculum development. Departmental administration responsibilities, principally meeting with students.

1998-2008 Loma Linda University, Department of Medicine, Assistant Research Professor

Assistant director of the Laboratory of Chemical Endocrinology, a research laboratory for the purpose of discovering new molecules of medicinal importance. Co-investigator for a five year NIH RO1 grant entitled, “Approaches to Natriuretic and Antihypertensive Agents.“ Over 30 analogs of *rac*-γ-CEHC were synthesized during the grant period and an asymmetric synthesis of the chiral γ-CEHC was also accomplished. Evaluation of these new analogs for the reversible inhibition of the apical 70 pS K^+ channel in renal TAL cells was used to screen the compounds for selection of a candidate for the identification of the γ-CEHC receptor. Also, co-investigator on pharmacologic studies of R-NSAIDs in animal models of colon and prostate cancer.

Instructor for introductory general and organic chemistry classes, as well as advanced organic chemistry and medicinal chemistry. Developed curriculum, as well as conducted laboratory sessions and tutorials. Departmental administration responsibilities, primarily meeting with students.

1992-1997 Loma Linda Univ., Laboratory of Chemical Endocrinology, Research Consultant

Responsible for writing scientific publications and grant proposals, analyzing raw research data, and performing computer database searching. Primary author of an

extensive review of the field of extracellular fluid volume control and natriuretic molecules. Performed editing function on scientific research publications.

1988-1992 Loma Linda University, Department of Medicine, Assistant Research Professor

Researcher in the Laboratory of Chemical Endocrinology, focusing on the development of molecules for the study of kidney disease. Directed a group of research biochemists and physiologists in the pursuit of the putative natural product, Natriuretic Hormone. Developed and performed chemical methods, leading to the chemical synthesis of several natriuretic compounds. Responsible for scientific presentations and writing research publications, patent applications, and reports.

Instructed introductory general and organic chemistry classes, developed curriculum, as well as conducted laboratory sessions and tutorials.

1982-1983 University of California, Los Angeles

Under the tutelage of Nobel Laureate, Dr. Donald Cram, conducted original research in the field of host-guest chemistry. Designed, synthesized, and characterized organic hosts in an effort to create synthetic enzyme mimics. Primarily aromatic molecules possessing cleft-shaped pockets were synthesized. Binding interactions were examined by NMR, crystal structure, and solution studies

Assisted professors in teaching undergraduate biochemistry and organic chemistry classes. Conducted laboratory sessions, tutorials, and lectures.

CORPORATE EXPERIENCE

2006-2011 Encore Pharmaceuticals, Inc., Vice President Research and Development

Direction of all research activities, including scientific project management, grant and publication writing, as well as patent conceptualization and development. Devise, plan, coordinate, and analyze scientific experiments. Develop preclinical and research strategy for pharmaceutical candidate discovery.

Principal Investigator and manager for NIH SBIR Phase I and II grants resulting in the identification of compounds as potential treatments for Amyotrophic Lateral Sclerosis (ALS). Conducted preclinical development of the identified ALS drug candidates, in preparation for submission of an Investigational New Drug (IND) Application to the FDA.

Management of Company’s Intellectual Property Portfolio, including conceptualization, application writing/administration, international IP portfolio tracking, and licensing.

Co-direction of financial development team for raising corporate capital from private and corporate investment partners, as well as sublicensing intellectual property to pharmaceutical and nutraceutical companies.

Participation on a Joint Steering Committee for the Phase II and III development of Flurizan®, the Company's sublicensed intellectual property and first drug candidate in clinical trials.

2006-2011 Encore Pharmaceuticals, Inc. Officer, Corporate Secretary

Management of Company's corporate documents pertaining to licenses and agreements, preferred and common stock, Board and Shareholder activities.

2001-2006 Encore Pharmaceuticals, Inc., Director of Research Operations

Management of the transition of Encore Pharmaceuticals, Inc. from operating within an academic environment to operating within an independent corporate environment. Designed and equipped a laboratory/office facility in the University Research Park (Riverside, CA). Established all corporate functions such as human resources/personnel, facility, intellectual property management, scientific protocols and SOPs, and identity development.

Direction of all research activities, including grant writing. Management of Company's intellectual property portfolio and corporate documents.

2000-2004 EncorePharma Development Services, Assoc. Director Research Operations

Part of clinical development team for Company's first drug candidate, Flurizan®. Participated in writing IND, clinical trial reports, and FDA annual reports involving Flurizan® for anti-cancer and anti-Alzheimer's disease indications. Developed client proposals for the Contract Research Organization (CRO) function of the Company.

RESEARCH INTERESTS

Discovery, pre-clinical, and clinical development of small molecules of medicinal importance. Synthesis and evaluation of analogs of gamma-carboxyethylhyroxychroman (CEHC) for the reversible inhibition of the apical 70 pS K^+ channel in renal TAL and treatment of neuroinflammatory diseases such as Amyotrophic Lateral Sclerosis (ALS). Pharmacologic studies of R-Flurbiprofen and other R-NSAIDs (nonsteroidal anti-inflammatory drugs) for treatment of colon and prostate cancer and Alzheimer's Disease. Chiral control of branched fatty acid oxidation: prevention and treatment of obesity and related metabolic diseases.

AWARDS AND GRANTS

Principal Investigator National Institutes of Health Grant SBIR Phase II grant, 2 R44 AG023519, Title: Novel CEHC Derivatives for Neuroinflammation, 2004-2008

Co-investigator National Institutes of Health Grant SBIR Phase I grant, 1R43 AG023519, Title: Novel CEHC Derivatives for Neuroinflammation, 2003-2004

Co-investigator National Institutes of Health Grant RO1 grant, HL56066, Title: Approaches to Natriuretic and Antihypertensive Agents, 1997-2003

DuPont Teaching Award, University of California, Los Angeles, 1983

Science Department Award, El Camino College, CA, 1979

BOARDS AND HONORS

Encore Pharmaceuticals, Inc. Director since 2008

Temple Beth Sholom Board of Directors since 1996 (President 2009-2011)

Temple Beth Sholom Congregant of the Year, 2004-2005

PUBLICATIONS

Agranat, Israel and **Benaksas Schwartz, E.J.**, *Chiral Control*. Manuscript in progress.

Grammas, P., Hamdheydari, L., **Benaksas, E.J.**, Mou, S., Pye, Q.N., Wechter, W.J., Floyd, R.A., Stewart, C.A., Hensley, K. (2004) *Anti-inflammatory Effects of Tocopherol Metabolites*. BBRC 319:1047-1052.

Hensley, K., **Benaksas, E.J.**, Bolli, R., Comp, P., Grammas, P., Hamdheydari, L., Mou, S., Pye, Q., Stoddard, M., Wallis, G., Williamson, K.S., West, M., Wechter, W.J. and Floyd, R.A. **(2004)** *New Perspectives on Vitamin E: Tocopherol and Carboxyethylhydroxychroman Metabolites in Biology and Medicine.* Free Radical Biology & Medicine, 36, 1-15.

Benaksas, E.J., Murray, E.D., Jr., and Wechter, W.J. **(1995)** *Natriuretic Hormones II*. Progress in Drug Research, 45, 245-288.

Benaksas, E.J., Murray, E.D., Jr. Rodgers, C.L., Pham, T., Bigornia, A.E., DeWind, S.A., Geibel, R., Brubacher, E.S., and Wechter, W.J. **(1993)** E*ndogenous Natriuretic Factors 1: Sodium Pump Inhibition Does Not Correlate with Natriuretic or Pressor Activities from Uremic Urine*. Life Sci. 52, 1045-1054.

Cram, Donald J., **Benaksas-Schwartz, Elaine J**., Knobler, Carolyn. **(1992)** *Host-guest Complexation. 65. Six New Saddle Shaped Hosts Based on Fused Dibenzofuran Units*. J. Am. Chem. Soc.

Wechter, W.J. and **Benaksas, E.J. (1990)** *Natriuretic Hormones*. Progress in Drug Research 34, 231-257.

Benaksas Schwartz, E.J. **(1989)** *Dibenzofuran Cavitands: Ribonuclease and Serine Protease Mimics and a New Method for Synthesizing 4-Aryl Imidazoles*. Ph.D. Dissertation. (University of California, Los Angeles, 228 pp. Diss. Abstr. Int. B. 1989, 50(2), 565.

PATENTS

Wechter, W.J., Gutierrez, I., **Benaksas Schwartz, E.J.**, Murray, E.D. Jr., USP Appl 20040152777, *Therapeutically Active Compounds*, Published October 5, 2004.

Wechter, W.J., Murray, E.D. Jr., **Benaksas Schwartz, E.J.**, Gutierrez, I., Quiggle, D.D., USP Appl 20040152146, *Methods for Screening Compounds for Use in the Treatment of Disease*, Published October 5, 2004.

Wechter, W.J., **Benaksas Schwartz, E.J.**, Murray, E.D. Jr., Gutierrez, I., USP Appl 20040151758, *Fat Substitutes*, Published October 5, 2004.

Wechter, W.J., **Benaksas Schwartz, E.J.**, USP Appl 20040067914, *R-NSAID Esters and their Use*, Published October 3, 2003.

Wechter, W.J., Murray, Jr. E. D., Kantoci, D., Levine, B., **Benaksas Schwartz, E.J.**, USP 6,150,402, *Natriuretic Compounds*, November 21, 2000.

Wechter, W.J., Murray, Jr. E. D., Kantoci, D., Levine, B., **Benaksas, E.J.**, USP 6,083,982, *Natriuretic Compounds*, July 4, 2000.

Wechter, William J.; Murray, David E.; Kantoci, Darko; Levine, Barry H.; **Benaksas, Elaine J**., US 94-290430 940815; WO 95-US10411 950815, *Natriuretic Cyclic Compounds*. February 22, 1996.

SPECIAL SKILLS

Strong interactive and communication skills, both written and oral.

Strong teaching and curriculum development skills. Experience teaching undergraduate organic, general, and bioorganic chemistry classes and conducting laboratory sessions and tutorials. Also tutoring high school chemistry students.

Strong organizational and financial management skills.

Extensive background in basic research in the field of organic/medicinal chemistry.

Extensive scientific project management experience at all levels, from synthetic chemistry development to preclinical and clinical development.

Proven grant writer and manager, resulting in over $2.5M in grants funded and administered as principal investigator.

Extensive patent/intellectual property management experience including conceptualization, application writing/administration, international IP portfolio tracking.

Broad business administration experience including facility, human resources and personnel, and corporate document management.

Business development experience, including for profit and non-profit fundraising from private and corporate sources.

Extensive experience with the leadership, management, and operations of a non-profit organization, including fundraising, programming, and recruiting.