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**BIOGRAPHICAL SKETCH**


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NAME	POSITION TITLE		
Dr. Anita Grant	Charlie Darwin Centennial Professor of Nanobioscience Director – Institute for Nanobioscience		
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Independence College, Philadelphia, Penn	B.A. (Honors)	1976	Chemistry (Honors)
Iona State University, Santa Barbara, CA	Ph.D.	1981	BioPhysics
Stanford University, Palo Alto, CA	NIH Postdoc Fellow	'81-'84	Biomedical Engineering

**ACADEMIC CAREER** University of Texas at Austin

Assistant Prof of Nanobioscience (1984-1990), Associate Prof of Nanobioscience (1990 –1996)

Professor of Nanobioscience and Biochemistry (1996 - )

1999-present Charlie Darwin Centennial Professor of Nanobioscience

1999-2004 Chairman, Department of Nanobioscience

2000-present Director, Institute for Nanobioscience, University of Texas at Austin

**MEMBERSHIPS and PROFESSIONAL SERVICE**

Member - AmChemSoc, AmSocNanoBiosci (ASNB), AmAssocAdvSci

Editorial Board – JACS, J. Nanobioscience, New Technology

Elected – Vice-President – American Society for Nanobioscience (2003, 2005)

Elected – Chair of Administrative Committee – Graduate Assembly (2002-2006)

ASNB - Local Chair (2002 national meeting of ASNB in San Antonio)

- ASNB Service Awardee – 2004

National Advisory Council - Independence College (1999 - present)

NIH Study Section Panel member (2000-04)

Academy of Distinguished Teachers – member since 2003

**UNIVERSITY and DEPARTMENTAL SERVICE**

Chair – Programming and Building Comm. – Faulkner Nanobioscience Bldg (2007)

Chair – *Ad hoc* Comm. of Gender and Diversity Issues in Science on Campus (2005-2006)

University Faculty Council (2000-2007)

University Tuition Policy Committee (2002-2003)

Faculty Advisory Comm on Budgets (2000-2003; Chair 2002-2003)

Graduate Adviser and GSC Chair; Ph.D. in BioNanobioscience (1986-90)

University Research Inst. Awards Comm. - 1997-99

Executive Comm. – Nanobioscience and Biophysics Training Grant

Provost Search Committee (2006)

**HONORS and AWARDS**

Donald Harrington Faculty Fellow - 1990

Presidential Young Investigator Award - (1985-88)

The “Nano–Bio, Small Science, Big Ideas” New Investigator Award – 1987

Charlie Darwin Centennial Professor of Nanobioscience (1999)

Texas Ex’s Teaching Award – 1997, Jean Holloway Award – 1999

Friar Centennial Teaching Fellowship - 2001

Academy of Distinguished Teachers – 2003

**TEACHING**

Introduction to Nanoscience (NB 303)

Introduction to Bioscience (NB 410)

Advanced Nanobioscience (NB 369)

Advanced Synthesis and Characterization of Nanostructures (NB 392L)

Graduate Student Supervision (current / total): Masters (2 / 8); Ph.D. (4 / 23)

## RESEARCH AREAS

Dr. Grant's research interests are in the synthesis of small molecular assemblages with biological applications in modern medicine and diagnostic applications. New paradigms have been developed for the automated, total synthesis of biopolymers as organized nanostructures. These nanobioscience structures have found applications in treating coronary atherosclerosis by being able to clear plaques in severely clogged arteries and has resulted in new life-saving treatments for those having suffered or at risk of myocardial infarctions. These advances have led to three patents that form the basis for a new biotech company called BioRotorRouter.

**RESEARCH SUPPORT** - 2 Federal and 1 State (~\$265,000 TDC / yr) – see attached sheet for details

## SELECTED PUBLICATIONS (2000-2007; out of total of 84 publications)

- Knapp, A.B., Lawson, P.Q., Ernest, O.R., and Grant, A., "Expression, Purification, and Structural Analysis of Monomeric Prototypes Isolated from *Escherichia coli*" *Protein Science*, **9**, 85-92 (2000).
- Oliveira, O.J., Grishin, A.V., and Grant, A., "Synthesis of Poly-L-glutamylhistidine as a Starting Material for the Construction of Nanoskeletons" *J. Molec. Biol.*, **296**, 112-17 (2001).
- Grant, A., Oliveira, O.J., and Ernest, O.R. "Structural Comparisons of Polyaminoacid Substrates to Common Hydrocarbon Precursors" in *Nanobioscience and Molecular Biology*, ed. A. Iricart, R.M. Reagan, and T. Martinez-Carrion, Birkhauser Verlag, Basel, 202-234 (2002).
- Taylor, O.B., Wang, C.L., Grant, A., and Whitman, E.R., "Mechanism of the Poly-L-glutamylhistidine Synthesis on the Activity of Biosubstrates and Avoidance of Inhibitory Factors in H to F mutants" *Biochemistry*, **41**:1-8 (2002).
- Almrud, M.L., Kern, AD. Wang, SC, Czerwinski, RM, Johnson, WH Jr., Murzin, AG, Grant, A., Whitman, E.R., " The Crystal Structure of Homologue "Y" from the Pathogenic Bacteria, *Yersinia pestis*, Confirms the Structural Basis for Oligomer Diversity in Bionanopolymers" *Biochemistry*, **42**:9007-24 (2003).
- Dasgupta, D.K., Almrud, M.L., Johnson, H.R., Whitman, E.R., and Grant, A., "Crystal Structures of Two Homologues of Poly-L-glutamylhistidine from *Helicobacter pylori* and *Archaeoglobus fulgidus*." *Nanobioscience*, **4**: 23-34 (2004)
- Hoffmann, W.S, Martinez, N., and Grant, A., "Solution Structure of a Substrate Materials for Nanomaterial Conserved Domains as Protein Regulators", *Biochemistry*, **44**: 10377-85 (2005).
- Almrud, M.L., Boelarends, J.J., Johnson, H.R., and Grant, A., "A Structural Basis for the Micromachine Properties and Plaque Cleansing Activities of Poly-L-glutamylhistidine Derived Substrates " *Bioengineering*, **14**: 14818-27 (2005).
- Boelarends, J.J., Almrud, M.L., Johnson, Jr. H.R., and Grant, A., "Testing of Poly-L-glutamylhistidine Derived Substrates as Materials for Biocompatible Micromachines in Medicine" *New Technology*, **5**: 5500-08 (2006).
- Golubkov, B.E., Wang, C.L., Whitman, E.R., and Grant, A., "Inactivation of Macrophage Inhibitory Factors by Poly-L-glutamylhistidine Modified Substrates." *Bioorganic Chemistry*, **34**:13-34 (2006).
- Grant, A., and Funded, W.I.B., "NanoSize Matters: A Case When Less is More" *Structure*, **15**, 1044-56 (2007).