

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed on Form Page 2.
Photocopy this page or follow this format for each person.

NAME Corbett, Anita H.		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Colgate University, Hamilton NY	BA	1988	Chemistry/Biochemistry
Vanderbilt University, Nashville TN	PhD	1992	Biochemistry
Harvard Medical School/Dana Farber Cancer Institute, Boston MA	Postdoc	1993-1997	

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED THREE PAGES.**

PROFESSIONAL POSITIONS

1986-1988 Teaching/Research Assistant in Chemistry, Colgate University, Hamilton NY
 1988-1992 Graduate Research Assistant in Biochemistry, Vanderbilt University School of Medicine, Nashville TN
 1992-1993 Research Associate in Biochemistry, Vanderbilt University School of Medicine
 1993-1997 Postdoctoral Fellow Department of biological Chemistry and Molecular Pharmacology, Dana Farber Cancer Institute, Harvard University School of Medicine, Boston MA
 1997-present Assistant Professor, Department of Biochemistry, Emory University School of Medicine, Atlanta GA

AWARDS AND OTHER PROFESSIONAL ACTIVITIES

1988-1990 National Research Service Award Traineeship
 1991 American Association of Cancer Research Travel Award
 1991 Vanderbilt University Graduate School Travel Award
 1992 Outstanding Presentation, Graduate Student Research Day, Vanderbilt University
 1996-2000 Biomedical Career Award from Burroughs Wellcome

RESEARCH PROJECTS ONGOING OR COMPLETED DURING THE LAST 3 YEARS

Basis of Ran-mediated Nuclear Transport PI: Anita H. Corbett, Ph.D.
 Agency: NIH
 Type: GM58728-02 Period: 02/01/99-11/30/03
 Major goal: To understand how the GTPase Ran and the Ran binding protein NTF2 cooperate to mediate directional transport of proteins into the nucleus.

Molecular Dissection of Nucleocytoplasmic Transport PI: Pamela Silver, Ph.D.
 Agency: International Human Frontiers in Science Program (HFSP) Collaborator: Anita H. Corbett, Ph.D.
 Type: International Collaborative Program Period: 09/01/98 - 08/31/04
 Major goal: To understand the molecular interactions between the cargo and the nuclear pore proteins that are critical for a receptor-cargo complex to be translocated through the nuclear pore.

PUBLICATIONS

- R. S. Rowlett, N. J. Gargiulo, F. A. Santoli, J. M. Jackson, and A. H. Corbett (1991) *J. Biol. Chem.* **266**, 933-941. "Activation and Inactivation of Bovine Carbonic Anhydrase III by Dianions."
- A. H. Corbett, E. L. Zechiedrich, and N. Osheroff (1991) *J. Biol. Chem.* **266**, 19666-19671. "Inhibition of Eukaryotic Topoisomerase II by Ultraviolet-Induced Cyclobutane Pyrimidine Dimers."
- A. H. Corbett, E. L. Zechiedrich, and N. Osheroff (1992) *J. Biol. Chem.* **267**, 683-686. "A Role for the Passage Helix in the DNA Cleavage Reaction of Eukaryotic Topoisomerase II: A Two-Site Model for Enzyme-Mediated DNA Cleavage."
- R. F. DeVore, A. H. Corbett, and N. Osheroff (1992) *Cancer Res.* **52**, 2156-2161. "Phosphorylation of Topoisomerase II by Casein Kinase II and Protein Kinase C: Effects on Enzyme-Mediated DNA Cleavage/Religation and Sensitivity to the Antineoplastic Drugs Etoposide and *m*-AMSA."
- A. H. Corbett, R. F. DeVore, and N. Osheroff (1992) *J. Biol. Chem.* **267**, 20513-20518. "Effect of Casein Kinase II-Mediated Phosphorylation on the Catalytic Cycle of Topoisomerase II: Regulation of Enzyme Activity by Enhancement of ATP Hydrolysis."

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6. A. H. Corbett, A. W. Fernald, and N. Osheroff (1993) *Biochemistry* **32**, 2090-2097. "Protein Kinase C Modulates the Catalytic Activity of Topoisomerase II by Enhancing the Rate of ATP Hydrolysis: Evidence for a Common Mechanism of Regulation by Phosphorylation."
7. M. J. Robinson, A. H. Corbett, and N. Osheroff (1993) *Biochemistry*, **32**, 3638- 3643. "Effects of Topoisomerase II-Targeted Drugs on Enzyme-Mediated DNA Cleavage and ATP Hydrolysis: Evidence for Distinct Drug Interaction Domains on Topoisomerase II."
8. A. H. Corbett, D. Hong, and N. Osheroff (1993) *J. Biol. Chem.*, **268**, 14394-14398. "Exploiting Mechanistic Differences Between Drug Classes to Define Functional Drug Interaction Domains on Topoisomerase II: Evidence that Several Diverse DNA Cleavage-Enhancing Agents Share a Common Site of Action on the Enzyme."
9. A. H. Corbett, P. Guerry, P. Pflieger, and N. Osheroff (1993) *Antimicrob. Agents Chemother.*, **37**, 2599-2605. "A Pyrimido[1,6 α]Benzimidazole that Enhances DNA Cleavage Mediated by Eukaryotic Topoisomerase II: A Novel Class of Topoisomerase II-Targeted Drugs with Cytotoxic Potential."
10. N. Osheroff, A. H. Corbett, S. H. Elsea, and M. Westergaard (1994) *Cancer Chemother. Pharmacol.*, **34** (Suppl), S19-S25. "Defining Functional Interaction Domains on Topoisomerase II by Exploiting Mechanistic Differences Between Drug Classes."
11. J. Flach, J. Vogel, M. Bossie, A.H. Corbett, T. Jinks, D.A. Willins, and P.A. Silver (1994) *Molec. Cell. Biol.*, **14**, 8399-8407. "A Yeast RNA Binding Protein Shuttles Between the Nucleus and the Cytoplasm."
12. A.H. Corbett, D.M. Koepp, M.S. Lee, G. Schlenstedt, A.K. Hopper, and P.A. Silver (1995) *J. Cell Biol.*, **130**, 1017-1026. "Rna1p, a Ran/TC4 GTPase Activating Protein, is Required for Import to the Nucleus."
13. P.S. Kingma, A.H. Corbett, P.C. Burcham, L.J. Marnett, and N. Osheroff (1995) *J. Biol. Chem.*, **270**, 21441-21444. "Abasic Sites Stimulate Double Stranded DNA Cleavage Mediated by Topoisomerase II: DNA Lesions as Endogenous Topoisomerase II Poisons."
14. D.M. Koepp, D.H. Wong, A.H. Corbett, and P.A. Silver (1996) *J. Cell. Biol.*, **133**, 1163-1176. "Dynamic Localization of the Nuclear Import Receptor and Its Interactions with Transport Factors."
15. A.H. Corbett and P.A. Silver (1996) *J. Biol. Chem.*, **271**, 18477-18484. "The NTF2 Gene Encodes a Highly Conserved, Essential Protein that is Required for Nuclear Transport *in vivo*."
16. B.K. Haarer, A.H. Corbett, Y. Kweon, A.S. Petzold, P.A. Silver, and S.S. Brown (1996) *Genetics*, **144**, 495-510. "SEC3 Mutations are Synthetically Lethal with Profilin Mutations and Cause Defects in Diploid-Specific Bud-Site Selection."
17. D.H. Wong, A.H. Corbett, H.M. Kent, M. Stewart, and P.A. Silver (1997) *Mol. Cell. Biol.* **17**, 3755-3767. "Interaction Between the Small GTPase Ran/Gsp1p and Ntf2p is Required for Nuclear Transport."
18. W.D. Clarkson, A.H. Corbett, B.M. Paschal, H.M. Kent, A.J. McCoy, L. Gerace, P.A. Silver, and M. Stewart (1997) *J. Mol. Biol.* **272**, 716-730. "Nuclear Protein Import is Decreased by Engineered Mutants of Nuclear Transport Factor 2 (NTF2) that do not Bind GDP-Ran."
19. H.M. Kent, M.S. Moore, B.B. Quimby, A.M.E. Baker, A.J. McCoy, G.A. Murphy, A.H. Corbett and M. Stewart (1999) *J. Mol. Biol.* **289**, 565-577. "Engineered Mutants in the Switch II Loop of Ran Define the Contribution made by Key Residues the Interaction with Nuclear Transport Factor 2 (NTF2) and the Role of this Interaction in Nuclear Protein Import."
20. H.-J. You, R.L. Swanson, C. Harrington, A.H. Corbett, S. Jinks-Robertson, S. Sentürker, S.S. Wallace, S. Boiteux, M. Dizaroglu, and P.W. Doetsch (1999). *Biochemistry* **38**, 11298-11306. "Saccharomyces cerevisiae Ntg1p and Ntg2p: Broad Specificity N-Glycosylases for the Repair of Oxidative DNA Damage in the Nucleus and the Mitochondria."
21. A.L. Jones, B.B. Quimby, J.K. Hood, P.H. Keshava, P. Ferrigno, P.A. Silver, and A.H. Corbett (2000). *Proc. Natl. Acad. Sci., USA* **97**, 3224-3229. "SAC3 May Link Nuclear Export to Cell Cycle Progression."
22. P. Fanara, M. Hodel, A.H. Corbett, and A. Hodel (2000). *J. Biol. Chem.* **275**, 21218-21223. "Quantitative Analysis of Nuclear Localization Signal (NLS)-Importin Alpha interaction through Fluorescence Depolarization: Evidence for Auto-inhibitory Regulation of NLS Binding."
23. B.B Quimby, T. Lamitina, S. L'Hernault, and A.H. Corbett (2000). *J. Biol. Chem.* **275**, 28575-28582. "Analysis of the *in vivo* Function of Nuclear Transport Factor 2 (NTF2)."
24. B.B Quimby, C.A. Wilson, and A.H. Corbett (2000). *Mol. Biol. Cell.* **11**, 2617-2629. "The Interaction between Ran and NTF2 is Required for Cell Cycle Progression."
25. N. Akhtar, K. Larsson, A-K. Pählman, A.H. Corbett, and L. Adler (2000). *FEBS Lett.* **483**, 87-92. "SGD1 Encodes an Essential Nuclear Protein of *Saccharomyces cerevisiae* Controlling the Expression of a Target Gene of the High Osmolarity Glycerol MAP Kinase Pathway."
26. R. Bayliss, H.M. Kent, A.H. Corbett, and M. Stewart (2000). *J. Struct. Biol.* **131**, 240-247. "Crystallization and X-ray Diffraction Characterization of Complexes of FxFG Nucleoporin Repeats with Nuclear Transport Factor 2 (NTF2) and with an Importin- β Construct."

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27. M.R. Hodel, A.H. Corbett, and A.E. Hodel (2001). *J. Biol. Chem.* **276**, 1317-1325. "Dissection of a Nuclear Localization Signal."
28. H. Wei, D. Ashby, C. Moreno, E. Ogris, F.M. Yeong, A.H. Corbett, and D.C. Pallas (2001). *J. Biol. Chem.* **276**, 1570-1577. "Carboxy-Methylation of the PP2A Catalytic Subunit in *Saccharomyces cerevisiae* is Required for Interaction with the B-type subunits, Cdc55p and Rts1p"
29. K. Marfatia, P. Fanara, M.T. Harreman, P.M. Vertino, and A.H. Corbett (2001). *Gene* **266**, 45-56. "Identification and Characterization of the hMOG1 Gene."
30. N. Akhtar, H. Hagan, J. Lopilato, and A.H. Corbett (2001). *MGG*, in press. "Functional Analysis of the Ran Exchange Factor, Prp20p: *in vivo* Evidence for the RanGTP Gradient Model".
31. T. Hendrickson, J. Yao, S. Bhadury, A.H. Corbett, and H. Joshi (2001). *Mol. Biol. Cell*, in press. "Conditional Mutations in γ -tubulin Reveal its Involvement in Chromosome Segregation and Cytokinesis."
32. B.B. Quimby, S. W. Leung, R. Bayliss, M.T. Harreman, G. Thirumala, M. Stewart, and A.H. Corbett (2001) submitted. "Functional Analysis of the Hydrophobic Patch on NTF2 Involved in Interactions with the Nuclear Pore."
33. R. Baker, M.T. Harreman, A.H. Corbett, and M. Stewart (2001) submitted. "The Interaction between Ran and MOG1 is Required for Efficient Nuclear Protein Import."

INVITED REVIEWS/BOOK CHAPTERS:

1. A. H. Corbett and N. Osheroff (1993). *Chem. Res. Toxicol.*, **65**, 585-597. "When Good Enzymes Go Bad: Conversion of Topoisomerase II to a Cellular Toxin."
2. N. Osheroff, A. H. Corbett, and M. J. Robinson (1994). in *Advances in Pharmacology* (L. F. Liu, Ed.) Academic Press, New York, 29B, 105-126. "Mechanism of Action of Topoisomerase II-Targeted Antineoplastic Drugs."
3. A.H. Corbett, P. Ferrigno, M.F. Henry, J.A. Kahana, D.M. Koepf, M.S. Lee, L. Ngyuen, G. Schlenstedt, M. Seedorf, E.C. Shen, T. Taura, D.H. Wong, and P.A. Silver (1996). *Exp. Cell Res.*, **229**, 212-216. "Genetic Analysis of Macromolecular Transport across the Nuclear Envelope."
4. A.H. Corbett and P. A. Silver (1997). *Microbiol. Mol. Biol. Rev.*, **61**, 193-211. "Nucleocytoplasmic Transport of Macromolecules".
5. A.H. Corbett (1997). *Trends in Cell Biology*, **7**, 297-298. "Nuclear Moguls Meet."
6. R. Bayliss, A.H. Corbett, and M. Stewart (2000). *Traffic* **1**, 448-456. "The Molecular Mechanism of Transport of Macromolecules through Nuclear Pore Complexes".
7. B.B. Quimby and A.H. Corbett (2001). *Cell and Molecular Life Sciences*. In press. "The Mechanism of Nuclear Transport."
8. P. Fanara, A.C. Berger, D.M. Green, M.T. Harreman, H. Hagan, K. Marfatia, B.B. Quimby, M.A. Powers, and A.H. Corbett (2001). In *Essential Cell Biology - A Practical Approach* (J. Davey and M. Lord, Eds.) Oxford University Press, in press. "Transport into and out of the Nucleus."
9. M. Damelin, P.A. Silver, A.H. Corbett (2001). *Methods in Enzymology: Guide to Yeast Genetics and Molecular Biology* (C. Guthrie and G.R. Fink, Eds.) Academic Press, Inc., in press. "Protein Transport Into and Out of the Nucleus".