

## CURRICULUM VITA

Eric Ulm

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USA

F.S.A - 2002, M.A.A.A - 2001

### EDUCATION

Ph.D., Physics, The Ohio State University, 1995.

Thesis Topic - Penetration Depth Studies in Ni and Zn doped  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ .

Adviser - Dr. Thomas R. Lemberger

M.S., Physics, The Ohio State University, 1991

B.S., Engineering-Physics, The Ohio State University, 1988

Honors Thesis - Current Distribution and Penetration Depth in Superconducting Indium-Oxide Films.

### PROFESSIONAL AFFILIATIONS

Fellow of the Society of Actuaries

Member of the American Academy of Actuaries

Member of the American Risk and Insurance Association

### FELLOWSHIP AND AWARDS

National Science Foundation Fellowship (9/88 - 8/91)

Ohio State University Fellowship (9/91-8/92, 9/93-8/94)

### EMPLOYMENT

8/05- : **Assistant Professor – Georgia State University**

- Taught Actuarial Science Courses in Life Contingencies and Risk Management Modeling.
- Research interests include options embedded in insurance contracts, pension funding issues, policyholder behavior, economic capital and the effect of hedging on corporate income and value.

8/02-5/05 : **Visiting Assistant Professor - University of Central Florida**

- Taught Actuarial Science Courses in Life Contingencies, Interest Theory, Investments, and Pensions at both B.S. and M.S. levels

- Performed independent research into rapid calculation of the values of options embedded in insurance contracts.

- 3/00-7/02 : **Assistant Actuary - Corporate Actuarial, Nationwide Financial**
- Modeled, validated and analyzed results of NY Regulation 126 cash flow testing and internal risk analysis models for public and private sector group annuity lines of business.
  - Managed NY Regulation 126 cash flow testing and internal risk modeling, validation and analysis for individual variable annuities..
  - Supported Valuation Actuary in projects related to individual and group annuities.
  - Valued and modeled hedges of GMDBs on variable annuities
- 12/96-3/00 : **Actuarial Assistant - Corporate Actuarial, Nationwide Financial**
- Modeled and analyzed results of NY Regulation 126 cash flow testing models for individual variable annuities.
  - Implemented a corporate level surplus and RBC projector in Delphi.
- 2/96-12/96 : **Actuarial Assistant - Group Life and Health, Nationwide Insurance**
- Developed Persistency Study for group life and health policies
  - Assisted with claim lag analysis for group health reserve setting.
  - Assisted with development of group health plans and forecasts.
- 9/94-6/95 : **Teaching Assistant - The Ohio State University**
- Taught one section per quarter of Physics 103 (The World of Energy), a course fulfilling general science requirements for non-science majors.
  - Had responsibility for lecturing 20-30 students and instructing labs.
  - Helped create tests for all sections.
- 9/92-6/95 : **Research Assistant - The Ohio State University**
- Prepared pure and doped  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films by coevaporation.
  - Created the first apparatus capable of measuring the absolute value of the magnetic field penetration depth in superconducting films.
  - Programmed extensively in FORTRAN, creating programs for acquiring, fitting and modeling data.
- 1/86-6/88 : **Undergraduate Research - The Ohio State University**
- Measured current distribution in amorphous In-InOx films.
  - Interfaced electronic meters with computers for data acquisition.

#### PUBLICATIONS – REFEREED SCHOLARLY

1. *“Analytic Solution for Return of Premium and Rollup Guaranteed Minimum Death Benefit Options under Some Simple Mortality Laws”* E.R. Ulm, ASTIN Bulletin **38**(2), 543-563 (2008)

2. ***“The Effect of the Real Option to Transfer on the Value of Guaranteed Minimum Death Benefits”*** E.R. Ulm, Journal of Risk and Insurance **73**(1), 43-69 (2006)
3. ***“Rapid Calculation of the Price of Guaranteed Minimum Death Benefit Ratchet Options Embedded In Annuities”*** E.R. Ulm, Journal of Actuarial Practice **11**, 169-195 (2004)
4. ***“Numerical modeling of a two-coil apparatus for measuring the magnetic penetration depth in superconducting films and arrays”***, S.J. Turneaure, E.R. Ulm, and T.R. Lemberger, J. Appl. Phys. **79**, 4221 (1996)
5. ***“Thermodynamics and critical fields of  $YBa_2(Cu_{1-x}Ni_x)_3O_{7-\delta}$  from a d-wave model of superconductivity”***, E.R. Ulm and T.R. Lemberger, Phys. Rev. B **53**, 11352 (1996).
6. ***“Fluctuation effects in the magnetic penetration depth of high- $T_C$  films”*** T.R. Lemberger, E. R. Ulm, K. M. Paget and V. C. Matijasevic, SPIE Conference Proceedings **2697**, 211 (1996).
7. ***“Magnetic penetration depth in Ni- and Zn- doped  $YBa_2(Cu_{1-x}M_x)_3O_7$  films”***, E.R. Ulm, J.-T. Kim, T.R. Lemberger, S.R. Foltyn and X.D. Wu, Phys. Rev. B **51**, 9193 (1995).
8. ***“Magnetic penetration depth  $\lambda(T)$  in Ni-doped  $YBa_2Cu_3O_7$  films”***, E.R. Ulm, J.-T. Kim and T.R. Lemberger, Physica B **194-196**, 2331 (1994).
9. ***“The midinfrared conductivity determined from the infrared reflectance of  $YBa_2(Cu_{1-x}Ni_x)_3O_{7-\delta}$  films”***, J.-T. Kim, E.R. Ulm and T.R. Lemberger, Physica B **194-196**, 1535 (1994).
10. ***“Infrared reflectance of  $YBa_2(Cu_{1-x}Ni_x)_3O_{7-\delta}$  films”***, J.-T. Kim, M.J. Sumner, E.R. Ulm and T.R. Lemberger, J. Phys. Chem. Solids **54**, 1335 (1993).
11. ***“Determination of the perpendicular penetration depth in superconducting thin films from the observation of non-uniform supercurrent flow”***, D.-S. Pyun, E.R. Ulm and T.R. Lemberger, Phys. Rev. B **39**, 4140 (1989).

#### PUBLICATIONS – NONREFEREED AND OTHER

1. ***“A Comparison of Statutory and GAAP GMDB Reserving Methods with Economic Value”***, E.R. Ulm, Applied Actuarial Research Conference, 2004
2. ***“The Effect of Policyholder Transfer Behavior on the Value of Guaranteed Minimum Death Benefits in Annuities”***, E.R. Ulm, Revise and Resubmit, North American Actuarial Journal

3. ***“On the Determination of Capital Charges in a Discounted Cash Flow Model”***, E.R. Ulm, Working Paper.

#### EXTERNALLY FUNDED RESEARCH PROJECTS

1. ***“The Effect of Policyholder Transfer Behavior on the Value of Guaranteed Minimum Death Benefits in Annuities”***, E.R. Ulm, beginning 2007 and ending 6/30/2008 \$15,000, principal investigator.

#### PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. ***“A Comparison of Statutory and GAAP GMDB Reserving Methods with Economic Value”***, E.R. Ulm, Applied Actuarial Research Conference, 2004
2. ***“Magnetic field penetration depth  $\lambda(T)$  in Ni-doped  $YBa_2(Cu_{1-x}Ni_x)_3O_7$ ”***, E.R. Ulm, J.-T. Kim, and T.R. Lemberger, 20th International Conference on Low Temperature Physics, 1994
3. ***“Effect of dopants on the magnetic field penetration depth in  $YBa_2Cu_3O_{7-\delta}$  thin films”***, E.R. Ulm, J.-T. Kim, T.R. Lemberger, S.R. Foltyn and X.D. Wu, March Meeting of the American Physical Society, 1994
4. ***“Temperature dependence of the magnetic field penetration depth in Ni-doped  $YBa_2Cu_3O_{7-\delta}$  thin films”***, E.R. Ulm, J.-T. Kim, and T.R. Lemberger, March Meeting of the American Physical Society, 1993
5. ***“Effect of dopants on the magnetic field penetration depth in  $YBa_2Cu_3O_{7-\delta}$  thin films”***, E.R. Ulm, J.-T. Kim, and T.R. Lemberger, March Meeting of the American Physical Society, 1992

#### OTHER PRESENTATIONS

1. ***“On the Determination of Capital Charges in a Discounted Cash Flow Model”***, E.R. Ulm, Temple University, 2009
2. ***“The Effect of Policyholder Transfer Behavior on the Value of Guaranteed Minimum Death Benefits in Annuities”***, E.R. Ulm, University of Texas – San Antonio, 2009

#### SUPERVISION OF DOCTORAL DISSERTATIONS

1. Andreas Milidonis, ***“Estimation of Distress Costs Associated with Downgrading Using Regime Switching Models,”*** Committee Member (2006)
2. Hua Chen, ***“Contingent Claim Pricing with Applications to Financial Risk Management,”*** Committee Member (2008)

3. Ruilin Tian, “*Moment Problems with Applications to Value-at-Risk and Portfolio Management,*”, Committee Member (2008)

#### SERVICE ACTIVITIES INTERNAL TO THE UNIVERSITY

1. Served on Faculty Search Committees in 2005, 2006 and 2007.
2. Advisor to the Actuarial Student Association 8/06-Present

#### SERVICE ACTIVITIES IN ACADEMIC AND PROFESSIONAL ORGANIZATIONS

1. Ad Hoc Referee for *Journal of Actuarial Practice, Assurances* and *North American Actuarial Journal*
2. Reviewer for the Ernst Meyer prize of the Geneva Association.

#### SERVICE TO THE COMMUNITY

1. Executive Education Seminars on Economic Capital Modelling in Milan, Italy, MetLife, AIG and ALICO (2007-present)
2. Radio appearance on WRFG 89.3, Atlanta, GA.