

Curriculum Vitae

George Thomas Yates

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Education:

Ph.D.	1977	Engineering Science	California Institute of Technology
M.S.	1972	Engineering Science	California Institute of Technology
B.S.	1971	Engineering Science	Purdue University

Professional Experience:

2007-	Associate Professor, Mathematics & Statistics, Youngstown State University	
2007-	Director of Center for Undergraduate Research in Mathematics (CURMath), Youngstown State University	
2002-07	Assistant Professor, Mathematics & Statistics, Youngstown State University	
1998-02	Adjunct Professor in Mathematics,	Kent State University, Trumbull
1995-02	Independent Consulting	
1998	Adjunct Professor in Mathematics,	Mount Union College
1992-95	Honorary Senior Lecturer / Senior Research Associate in Mechanical Engineering,	University of Hong Kong
1985-92	Senior Scientist in Engineering Science,	California Institute of Technology
1980-82	1988-92 Lecturer,	California Institute of Technology
1977-85	Research Fellow in Engineering Science,	California Institute of Technology

Awards, Honors and Other Recent Professional Activities:

2010 Distinguished Professorship Award for Excellence in University Service at YSU.
2008 Advise MCM-COMAP student team, David Martin, Matt Alexander and Erica Cross, who received "Outstanding Award" (top 0.8%).
2006 Distinguished Professorship Award for Excellence in Teaching at YSU.
2005 Awarded Research Professorship by Youngstown State University.
2005 Named in Resolution by Youngstown State University Board of Trustees in "Congratulating Students who made Presentations at the National Mathfest Meeting."
2003 Named in Resolution by Youngstown State University Board of Trustees in "Congratulating Mathematics Students and the Department of Mathematics and Statistics on their Performance in the 2003 Mathematical Modeling Competition."
1991 STA Fellow, Ship Research Institute, Tokyo, Japan. Summer, 1991.
1989 Organizer & Chairman of *Symposium on Fluid Dynamics to Honor T. Y. Wu*, Aug. 17-18, 1989, California Institute of Technology.

Teaching Experience:

2002-2011	Calculus / Numerical Analysis / Differential Equations / Statistics / Financial Mathematics / Mathematical Biology
1996-2003	Calculus / College Algebra / Fluid Power, Hydraulics
1995-2000	Algebra / Geometry and Trigonometry
1992-95	Mathematics / Numerical Methods / Heat Transfer / Energy Systems
1990	Methods of Applied Mathematics
1988-89	Fluid Mechanics and Gas Dynamics
1978-92	Engineering Mathematics, Fluid Mechanics, Low Reynolds number flows

Research Interests:

Interdisciplinary instruction in Mathematics and Biology. Microbial growth curve analysis; Biological fluid transport mechanisms; Mechanics of swimming and flying; Nonlinear and dispersive waves and stability of steady state solutions and the unsteady response when external forcings are applied; Innovative education and teaching methods incorporating technology and numerical methods.

Grants:

Awarded \$1800 from the School of Graduate Studies and Research of YSU for a Research Assistant (Casey Robinson) during the 2011 summer to work on “Mathematical Analysis and Modeling of Butanol Production by Bacteria”.

Awarded \$1250 from the School of Graduate Studies and Research of YSU for a Research Assistant (James Eynon) during the 2009-2010 year to work on “Bacterial Growth in Toxic Environments”.

NSF DBI 0827205: Undergraduate Research Experience in Mathematical Biology, (\$238,940; 9/2008-9/2011). Principal Investigator.

NSF DUE 0337558: Interdisciplinary undergraduate education through intensive research experiences in mathematics and biology (\$100,000; 9/2003-9/2005). Co-Principal Investigator.

Proposal to NSF (received top rating of “highly competitive”, not funded): UBM-Group, RUI: Sustained Undergraduate Research Experiences in Biology and Mathematics (YSU-BaM). Principal Investigator.

Professional and Honorary Societies:

Mathematical Association of America (2002-)

American Mathematical Society (2008-)

Society for Industrial and Applied Mathematics (2007-)

Society for Mathematical Biology (2004-)

American Physical Society (Division of Fluid Dynamics) (Member, 1985-)

American Society of Mechanical Engineers (Member, 1977-)

Sigma Xi (Member, 1973-)

International Society of Offshore and Polar Engineers (Member, 1994-2008)

American Society of Civil Engineers (Member, 1993-2008)

Referee and Review Services:

NSF Proposals, Quarterly of Applied Mathematics, Journal of Fluid Mechanics, Wave Motion, Physics of Fluids, Journal of Fluids Engineering, Journal of Applied Mechanics, Journal of Engineering Mechanics, Europhysics Letters, Journal of Experimental Biology, Canadian Journal of Zoology, American Zoologist.

Consulting:

Department of Navy, Bioject, Engineering & Science Associates, Mini-Med Technologies (Siemens), KF Applications, Kringeta Design, Delphi Packard Electric.

Community Service:

Kiwanis Club of Boardman (Member 1996- ; President 1998-99; Div. 21 Lt. Gov. 2000-01)
Pacific Collegiate Hockey Association (Sec.-Treas. 1984-92)
Caltech Hockey Club (President 1977-92)

Recent Seminars, Workshops and Meetings (2002-11):

- March 25-26, 2011. Attend the Ohio Section meeting of MAA at Youngstown State University, Youngstown, OH, and advise student presentation of Lisa Curll “A Differential Equation Model for Stochastic Riparian Ecosystems”.
- March 11-12, 2011. 2011 NSF UBM-PI Meeting. Colorado State University, Fort Collins, CO. 1) Participate in group discussions with UBM PI’s 2) Two students presented results of their MBUR projects by giving both oral and poster presentations.
- Jan. 6-9, 2011. Joint Mathematics Meeting (AMS-MAA). New Orleans, LA. 1) Poster presentation “MBUR (Mathematical Biology & Undergraduate Research): Modeling the Dynamics of Riparian Forests and Landforms”. 2) Member of the joint AMS-MAA Committee on Teaching Assistants and Part Time Instructors. 3) Invited participant in the focus group for the Calculus for Life Science/Calculus for Biologists Course.
- November 19-20, 2010. Undergraduate Research Conference at the Interface of Biology and Mathematics hosted by the National Institute for Mathematical and Biological Synthesis (NIMBioS) on in Knoxville, TN. Six undergraduate students gave posters and oral presentations on their MBUR research conducted at YSU.
- November 4, 2010. Conduct a workshop for local high school students at the YSU’s MathFest, “Mathematics in the Environment: Quantifying Biological Diversity.” Youngstown State University, Youngstown, Ohio.
- August 4-7, 2010. MathFest 2010. Annual Summer Meeting of the Mathematical Association of America (MAA) and Pi Mu Epsilon (PME), Pittsburgh, PA. Ten students gave presentations, and three students won awards for their talks.

- July 13, 2010. SIAM Conference on the Life Sciences / Annual Meeting on in Pittsburgh, PA. Six students from MBUR program attended this meeting.
- April 16-17, 2010. Attend the OHIO section meeting of MAA at Kent State University, Kent, OH.
- Jan. 13-16, 2010. Joint Mathematics Meeting (AMS-MAA). San Francisco, CA. (1) Poster presentation “MBUR (Mathematical Biology & Undergraduate Research): Modeling Growth and Biochemical Pathways in Selenite Resistant Bacteria”. (2) Oral presentation “Mathematical Biology and Undergraduate Research (MBUR) at Youngstown State University”.
- November 19, 2009. Conduct a workshop for local High School students at the Math Department’s MathFest, “What do the Swine Flu and a Murder Mystery have in Common?” Youngstown State University, Youngstown, Ohio.
- October 23-24, 2009. Undergraduate Research Conference at the Interface of Biology and Mathematics hosted by the National Institute for Mathematical and Biological Synthesis (NIMBioS) on in Knoxville, TN. Seven undergraduate students gave posters and oral presentations on their MBUR research conducted at YSU.
- August 5-8, 2009. MathFest 2009. Annual Summer Meeting of the Mathematical Association of America (MAA) and Pi Mu Epsilon (PME), Portland, OR. Four of twelve students won awards for their talks.
- Jan. 5-8, 2009. Joint mathematics Meeting (AMS-MAA). Washington, DC.
- November 20, 2008. Give a workshop for local High School students at the Math Department’s Annual MathFest, “Biological Diversity - Mathematics in the Environment.” Youngstown State University, Youngstown, Ohio.
- July 29-August 2, 2008. MathFest 2008. Annual Summer Meeting of the Mathematical Association of America (MAA) and Pi Mu Epsilon (PME), Madison, WI. Four of eleven students won awards for their talks.
- June 8-16, 2008. Serve as a Reader at the College Board’s 2008 AP Reading in Calculus in Kansas City, MO.
- April 11-12, 2008. Attend the OHIO section meeting of MAA at Marietta College, Marietta, OH, Accompany six students and help prepare five students for their presentations.
- November 15, 2007. Conduct a workshop for local High School students at the Math Department’s Annual MathFest, “Math in Medicine and Forensic Science.” Youngstown State University, Youngstown, Ohio.
- November 9-10, 2007. Attend the “Conference on Undergraduate Research in Mathematics” at Penn State University, Accompany three YSU undergraduates who gave presentations.
- August 2-6, 2007. MathFest 2007, MAA and Pi Mu Epsilon (PME) Student Papers. San Jose, CA. (Four of fifteen students won awards for their presentations.)
- November 16, 2006. Conduct a workshop for local High School students at YSU’s 4th Annual MathFest, “Birds, Bees, Flowers and Trees”. Youngstown State University, Youngstown, Ohio.

- Aug. 9-12, 2006. MathFest 2006, MAA and Pi Mu Epsilon (PME) Student Papers. Knoxville, Tennessee. (Five of nine students won awards for their presentations.)
- March 31 – April 1, 2006. OHIO section meeting of MAA at the University of Akron. (Five of nine attending students gave presentations; one team finished 3rd in the Student Problem-Solving Competition.)
- November 17, 2005. Conduct a workshop for local High School students at YSU's 3rd Annual MathFest, "Growth, Decay, and Forensic Science". Youngstown State University, Youngstown, Ohio.
- Sept. 30-Oct. 1, 2005. Contributed Paper "Singular Perturbation Analysis of Bacterial Growth in Presence of Toxins". At Thirty-Third Annual Mathematics & Statistics Conference "Mathematics and Biology", Miami University, Oxford Ohio.
- Aug. 4-6, 2005. MathFest 2005, MAA and Pi Mu Epsilon (PME) Student Papers. Albuquerque, New Mexico. (Five of seven students won awards for their presentations.)
- March 21, 2005. Special Evening Lecture. "Generation, Propagation and Inundation of Tsunamis". Gerace Research Station, San Salvador, Bahamas.
- February 15, 2005. Joint Mathematics Department Colloquium and Pi Mu Epsilon Featured Speaker. "Tsunamis and Mathematics". Youngstown State University, Youngstown, Ohio.
- November 18, 2004. Conduct a workshop for local High School students at YSU's 2nd Annual MathFest, "The Mathematics of Bio-Diversity". Youngstown State University, Youngstown, Ohio.
- Aug. 11-14, 2004. MathFest 2004, MAA and Pi Mu Epsilon (PME) Student Papers. Brown University, Providence, Rhode Island.
- July 25-28, 2004. Invited presentation at the International Conference for Mathematics in Biology and Medicine (Annual Meeting for the Society for Mathematical Biology), "Interdisciplinary Education for Students in Mathematics and Biology". University of Michigan, Ann Arbor, Michigan.
- June 20-25, 2004. Presentation at the 23rd International Conference on Offshore Mechanics and Arctic Engineering, "Interdisciplinary Education and Research Experiences for Undergraduate Students in Mathematics and Biology". Vancouver, British Columbia, Canada.
- March 25-26, 2004. Invited presentation at the Project NExT Workshop, "Mathematical Biology and Interdisciplinary Undergraduate Education". Attend MAA – Ohio Section, Spring Meeting at The University of Cincinnati, Cincinnati, Ohio.
- October 30, 2003. Conduct a workshop for local High School students at YSU's MathFest, "Mathematics in Biology - Modeling Population Growth and Decline". Youngstown State University, Youngstown, Ohio.
- July 31-Aug. 2, 2003. MathFest 2003, MAA and Pi Mu Epsilon (PME) Student Papers. Boulder, Colorado.

July 21-25, 2003 MAA sponsored workshop on "Creating and Teaching Courses that Integrate Biology and Mathematics", Hope College, Holland, Michigan.

Oct. 25, 2002 Ohio MAA/Ohio MATYC Fall 2002 Joint Meeting
Kent State University, Trumbull Campus, Warren, Ohio, USA