

NOMINATION COVER SHEET
2008 Virginia Outstanding Faculty Awards

1. <u>NAME</u> Full (Legal): John Kattwinkel	
Preferred First Name: John	
2. <u>INSTITUTIONAL INFORMATION</u>	3. <u>PROFESSIONAL INFORMATION</u>
Institution: University of Virginia	Academic Discipline: Pediatrics
Rank/Position Title: Professor	Specialization/Field: Neonatology
Year Rank/Title Attained: 1984	Type of Terminal Degree: MD
Years at Institution: 33	Year Awarded: 1968
Campus Email Address: JK3F@virginia.edu	Awarding Institution: Harvard University
Campus Phone: 434-924-5428	
Campus Mailing Address: Box 800386, University of Virginia Health System, Charlottesville, VA 22908-0386	4. <u>PERSONAL INFORMATION</u>
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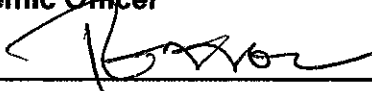
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Please check only ONE box:

- RESEARCH/DOCTORAL INSTITUTION NOMINEE: X
MASTERS/COMPREHENSIVE/BACCALAUREATE INSTITUTION NOMINEE:
TWO-YEAR INSTITUTION NOMINEE:
RISING STAR NOMINEE:
TEACHING WITH TECHNOLOGY NOMINEE:

President or Chief Academic Officer

Signature: _____



Printed Name: Arthur Garson, Jr., M.D., M.P.H., Executive Vice President and Provost

MISSION STATEMENT

The central purpose of the University of Virginia is to enrich the mind by stimulating and sustaining a spirit of free inquiry directed to understanding the nature of the universe and the role of mankind in it. Activities designed to quicken, discipline, and enlarge the intellectual and creative capacities, as well as the aesthetic and ethical awareness, of the members of the University and to record, preserve, and disseminate the results of intellectual discovery and creative endeavor serve this purpose. In fulfilling it, the University places the highest priority on achieving eminence as a center of higher learning.

SUMMARY OF ACCOMPLISHMENTS

John Kattwinkel, M.D.

John Kattwinkel, MD graduated from Rensselaer Polytechnic Institute (RPI), Dartmouth Medical School, and Harvard Medical School. After completing an internship and residency in Pediatrics at Duke University, he spent 2 years at the National Institutes of Health in the study of cystic fibrosis, learning research techniques and caring for patients with cystic fibrosis. He then completed a fellowship in the relatively new field of neonatology at Case Western Reserve University in Cleveland, and joined the faculty of the University of Virginia in 1974 as Chief of Neonatology in the Department of Pediatrics. Although he stepped aside as Division Chief in 2006, he remains an active member of the faculty, continuing to teach, care for patients in the Neonatal Intensive Care Unit, conduct clinical research as the Charles I. Fuller, Jr. Chair in Neonatology, and to be involved in local, national and international educational endeavors.

TEACHING

Dr. Kattwinkel has been responsible for teaching the fundamentals of neonatology to a wide range of learners for 33 years, from 3rd and 4th year medical students, to residents in Pediatrics, Family Practice, Anesthesia, and Obstetrics/Gynecology, and to nurses, nurse practitioners, and allied personnel in the Newborn Intensive Care Unit at the University of Virginia Hospital. Dr. Kattwinkel is a highly respected and highly regarded teacher. He is consistently rated at the top of his Division by both 3rd year medical students completing their Pediatrics clerkship and by the residents in the Department of Pediatrics; excerpts of their comments are included in this nomination packet.

As Director of the Neonatology Fellowship Program, Dr. Kattwinkel organized their curriculum and served as mentor to 26 neonatology fellows who are now American Board of Pediatrics-certified practicing neonatologists. Some of his former fellows are in academic medical centers, while others are practicing neonatologists in tertiary care hospitals, including several in Virginia. In 2007 he was honored with the University of Virginia Alumni Association Distinguished Professor Award.

Dr. Kattwinkel's teaching activities extend far beyond the campus of the University of Virginia. The Perinatal Continuing Education Program (PCEP), which was originally developed for the hospitals in communities in the referral area served by the University of Virginia, was supported by a grant from the National Institutes of Health, with Dr. Kattwinkel as Principal Investigator. The PCEP involves a 9-month prescribed interaction between the regional center and community practitioners, and includes four volumes of self-instructional textbooks, organized reviews of patient care practices, and skills workshops which were created as part of that program. Since its original development in 1976-79, PCEP has been updated, expanded, and disseminated nationally. In 1979, his Perinatal Continuing Education Program received an Outstanding Instructional Development Award from the National Society for Performance and Instruction. The PCEP now has been used by over 200 regional centers across the United States to provide outreach education to over 100,000 perinatal physicians and nurses. The American Academy of Pediatrics recently endorsed the Program by accepting publishing responsibilities and disseminating the PCEP books through its marketing division.

In the early 1980s, the American Academy of Pediatrics organized an educational program for resuscitating newly born infants, called the Neonatal Resuscitation Program (NRP). Dr. Kattwinkel was a founding member of the steering committee for that national project. He served as chair of the steering committee for 6 years, and has served as Editor of the NRP

textbook for the past two editions and has been asked to edit the next edition. The NRP has been used by over two million students and is a required program in most hospitals offering delivery services in the United States. It is a world-wide resource, being used by perinatal professionals in over 100 other countries. In 2000, the *Textbook of Neonatal Resuscitation*, edited by Dr. Kattwinkel, received the award from the American Medical Writers Association Book Awards Competition as the Best Allied Health publication released in 2000, and the National Institutes of Health awarded him the Plain Language Award for public education material he wrote regarding reducing the risk of SIDS.

His formal teaching activities have included lectures in 33 states and in 7 countries.

DISCOVERY

Dr. Kattwinkel has been active in clinical and basic research throughout his career, with several discoveries that have made a life saving impact on the care of newborn infants, both "term infants" and those born prematurely. During his neonatology fellowship training at Case Western Reserve University, he developed a technique for administering continuous positive airway pressure ("CPAP") to infants with idiopathic respiratory distress syndrome (IRDS) through fitted nasal prongs. (Kattwinkel J, Fleming D, Cha C, Fanaroff A, Klaus, M: A new device for the administration of continuous positive airway pressure by the nasal route. *Pediatrics* 52:131, 1973.). IRDS was a major cause of morbidity and mortality for premature infants at that time, and "nasal CPAP", as it came to be known, revolutionized the care of these infants by providing a way to oxygenate these babies and avoid collapse of the breathing passages as they matured without necessarily having to resort to endotracheal intubation and the use of mechanical ventilators. This approach has been adopted in NICUs throughout the world.

In the 1970's, it became apparent that part of the pathogenesis of IRDS was a deficiency in surfactant, an endogenously-produced compound that helped improve surface tension in the lungs of babies. Although the relationship of surfactant deficiency to IRDS was beginning to be understood, the ability to intervene by using surfactant prophylactically or therapeutically was not yet available. Dr. Kattwinkel has been a leader in this field, and helped organized several multicenter studies and trials to assess the efficacy of these treatments, the best type of surfactant to be used, and issues related to the mechanism and timing of the delivery of the medications. This remains an ongoing area of active investigation for him.

In 1992, the American Academy of Pediatrics asked Dr. Kattwinkel to chair a special task force to investigate the relationship of infant sleeping position to the incidence of Sudden Infant Death Syndrome (SIDS), sometimes referred to as "crib death". SIDS has resulted in more infant deaths in the United States than any other cause beyond the immediate newborn period, accounting for approximately 6,000 deaths per year throughout the 1980s and up until 1992. After reviewing the world's literature, the Task Force concluded that there was a clear link between prone sleeping ("sleeping on the stomach") and SIDS, and recommended in 1992 that, rather than the traditional American practice of stomach-sleeping, babies be placed down for sleep on their backs. In cooperation with the National Institutes of Health, Dr. Kattwinkel served as the American Academy of Pediatrics' representative to co-direct the initiation of a national campaign to educate the public about the hazards of prone sleeping during infancy. Dr. Kattwinkel was the visible "point person" for the public discussion of this proposal, which flew in the face of the conventional wisdom of the time. This activity included multiple interviews with members of the print and electronic media. He was able to present the findings of the Task Force in a thoughtful, reasoned, and persuasive manner. As a result of the Task Force recommendation and the "Back to Sleep" campaign, prone sleeping fell from approximately 70% of the U.S. infant population to less than 20% in 1998. During this same time period, the incidence of SIDS fell by over 50%. This means that approximately 3000 fewer babies are dying

each year from SIDS. In April, 2005, Dr. Kattwinkel was awarded the National Institutes of Health Plain Language Award for "Safe Sleep for Baby: Reducing the Risk of SIDS".

INTEGRATION OF KNOWLEDGE

Much of Dr. Kattwinkel's research can be categorized as "clinical research", and he has been able to translate these findings and observations into his own clinical practice and to disseminate this information to others, with the goal of improving clinical practice and clinical outcomes for newborn infants. The Perinatal Continuing Education Project (PCEP) and the Neonatal Resuscitation Program, discussed under "Teaching", are excellent examples of this, as is the "Back to Sleep" campaign for the prevention of SIDS by changes in sleep-position practice.

Dr. Kattwinkel has also been involved in a number of international programs to improve clinical practice and outcomes. In 1979, Project HOPE asked him to serve as medical director of a project designed to improve the status of perinatal care in Poland. Initial activities during the early 1980's included improving neonatal facilities at the Institute of Pediatrics and Medicine (IPAM) and the sister obstetrical hospital in Krakow, conducting educational conferences at IPAM for outlying primary care hospitals, and purchasing some essential equipment and supplies for those hospitals. In 1987, with funding from the Agency for International Development, Dr. Kattwinkel and his associates worked with HOPE to design and implement a more comprehensive perinatal education program for all of the 58 hospitals with perinatal services in the eight voivodships (counties) in Southeast Poland. The 4-year plan involved adapting the U.S. version of PCEP (originally developed by Dr. Kattwinkel) to the Polish language and perinatal health practices, to train the IPAM staff in the techniques of Program coordination, to test effectiveness of the Program through a controlled implementation strategy in the other voivodships, and then to allow IPAM to serve as a training center for dissemination of the Program to other parts of Poland. Over 2000 Polish physicians, nurses, and midwives participated in the program.

In 1983, Project HOPE asked Dr. Kattwinkel to organize a 5-year project to develop a Newborn Intensive Care Unit in the Zhejiang Medical University's (ZMU) affiliated Children's Hospital in Hangzhou, China. The Project involved purchasing equipment, remodeling the facilities, and organizing appropriate training programs. The latter included U.S. fellowship experiences for Chinese physicians and nurses as well as teaching fellowships for U.S. neonatologists and nurses in China. The project was successfully completed in 1988 when responsibility for the new unit was transferred to the Chinese. While the immediate objective for that project had been to develop a modern intensive care facility, long range goals were to establish the unit as a training center for intensive care facilities which were developing in other parts of the country and to develop a perinatal outreach education program to address more basic neonatal care practices throughout the province and beyond. Fifteen years after the HOPE project, the Hanzhou NICU continues to serve as a training center for neonatologists from elsewhere in China. Also, a HOPE consultant from the original NICU development project has adapted and translated portions of the University of Virginia Perinatal Continuing Education Program for use in more rural Chinese hospitals. This outreach education program has been endorsed by the Chinese Bureau of Public Health for widespread use throughout Central China. A manuscript describing the project is available. In recognition of his teaching efforts in China, Dr. Kattwinkel was awarded an honorary Associate Professorship at the Zhejiang Medical University in Hangzhou.

In 1984, Professor David Woods from the University of Cape Town visited the University of Virginia to learn how to develop a perinatal continuing education program for rural South

Africa. Dr. Woods subsequently used the Virginia Perinatal Continuing Education Program, developed by Dr. Kattwinkel, as a model to develop a similar outreach program for use in his country. Dr. Kattwinkel was asked to travel to South Africa in 1986 and again in 1993, as a consultant for Dr. Woods' project. Two PCEP-style textbooks have been written and revised and the resulting "Perinatal Education Programme (PEP)" has been disseminated throughout Cape Town and several other regions of South Africa.

SERVICE

Soon after his arrival in Virginia in 1974, Dr. Kattwinkel developed a perinatal regional plan for the 12 hospitals in Northwest Virginia, with the University of Virginia Hospital serving as the perinatal regional center for that part of the state. This activity required developing the Newborn Intensive Care Unit at the University as a referral and consultative center and also setting up a Newborn Emergency Transportation System (NETS) to move critically ill babies from the surrounding hospitals to the tertiary care nursery. This was the first neonatal transport system in Virginia that was based in a University hospital. Along with that activity was the development of an educational program for community physicians and nurses. As a founding member and later Chair of the Governor's Perinatal Services Advisory Council, he was instrumental in establishing a similar perinatal plan for other regions across the State. In 1999 the Virginia Chapter of the American Academy of Pediatrics recognized him with the Child Advocate Award.

Under Dr. Kattwinkel's guidance, the NICU at the University of Virginia has grown and expanded. Over the years he has shepherded two major relocations of the nursery, as well as an additional extensive renovation to ensure that the babies have state-of-the-art technology and equipment. He also provided leadership in the development of the ECMO (extracorporeal membrane oxygenation) at the University of Virginia. This technology provides a way to oxygenate babies without using their lungs, and is critical in those infants with severe lung disease or malformations that make ventilation ineffective. The NICU at the University of Virginia cares for approximately 500 premature or sick infants per year.

As an attending physician in the Division of Neonatology, Dr. Kattwinkel provides direct "hands on" patient care several months a year in the Neonatal Intensive Care Unit and the Intermediate Care Nursery, where he is directly involved in patient care and in medical education to a range of learners. His effectiveness as a teacher and role model is reflected in the positive evaluations that he has received (summarized later in this nomination portfolio). He is a true "team player" at the University, and is involved in a wide range of committee and administrative activities on a Departmental, School of Medicine, and University level. Among his activities has been serving on the Department of Pediatrics internal review committee for Promotions and Tenure. He has chaired this committee since 1987, providing invaluable mentoring and advice to his departmental colleagues. He is valued for his insight, wisdom, and professionalism, and is a highly effective mentor to his faculty colleagues.

Dr. Kattwinkel's national activities have included serving on a number of NIH study sections, peer review panels, and consensus panels. He has served on the editorial boards of *Pediatrics*, *Pediatrics in Review*, and *NeoReviews*. He also received the Ross Education Award and the Neonatal Education Award from the American Academy of Pediatrics. In 2004, he was one of 13 recipients of the Discovery Health Channel's Medical Honors during the network's inaugural biennial event for his "Back to Sleep" education activities. His clinical reputation is reflected in his inclusion in "Best Doctors in America" and in "America's Top Doctors". He has been a leader in the major organizations related to neonatology and to research in Pediatrics.

John Kattwinkel is the model of an academic physician. His excellence in patient care, research, fostering public awareness, education and mentoring of physicians and other health professionals, and his dedication to his field set a high standard for his colleagues. He is truly an outstanding faculty member, and is deserving of consideration for the 2008 SCHEV Outstanding Faculty Award.

PERSONAL STATEMENT

John Kattwinkel, MD

Education is the most satisfying and rewarding endeavor we can undertake. It is a better peacemaker than diplomacy, a better savior than welfare, and even can be a better healer than medicine. In Poland, I have seen an educational program reach the hearts of people living behind the Iron Curtain while political initiatives and propaganda broadcasts foundered.¹ In China, I have seen an educational initiative, designed around local resources, result in a greater and more sustained improvement in health care to a portion of the Third World than millions of dollars of direct aid ever could have done.² In the U.S., I have seen a public education program with a very simple message (put your baby "back to sleep") save over 3000 infant lives per year.³ When someone learns something and then implements that knowledge, he or she develops a sense of pride and accomplishment that will propagate more learning and more accomplishment long after the original teacher is gone.

The field of academic medicine offers challenging opportunities in all four of the scholarly areas described by Boyer. As a member of the medical school faculty, it has been an honor to have had the opportunity to challenge the young minds of medical students, residents in training, neonatology fellows, nurses, and allied medical personnel as they learn the physiology and pathology associated with a baby's transition from intrauterine to neonatal life. I enjoy presenting the physiologic principles in formal lectures during the curriculum of the first two medical school years, but the real joy is teaching at the bedside as young physicians and nurses learn to apply those principles during the clinical years. Learning the physiology of the transitional circulation of blood, for example, can certainly be taught through diagrams and biochemical formulas in a textbook, but nothing can be more instructive than watching a distressed cyanotic newborn dramatically turn pink as his pulmonary vasculature relaxes when he is given nitric oxide to breathe in the newborn intensive care unit. I have been fortunate to have had the opportunity to teach in the classroom, at the bedside, in small tutorial groups, through delivery of numerous invited lectures, and through development of textbooks and audiovisual materials concerning care of the at-risk and distressed newborn. As an academician, it has been my responsibility to discover new knowledge and new methods of integrating that knowledge into the care practices of emerging as well as established clinicians. Our Perinatal Continuing Education Program evolved over three years of research in the community hospital environment and established a template of interdisciplinary learning and application of knowledge that has served as a model for continuing medical education in other age groups, other disciplines, and other countries.^{4,5} The Neonatal Resuscitation Program that I will have edited for 3 editions was written only after an in-depth process of evaluating the scientific evidence,⁶ which has resulted in it now serving as the document defining the standard of care for over 2 million clinicians.⁷ Finally, medical education becomes truly effective only after it results in improved service in the form of better health to the community. The education programs that I have been instrumental in developing for professionals have been implemented in countries around the world and improved the survival and quality of life for countless newborns. Similarly, the professional and public education programs aimed at reducing the risk of Sudden Infant Death Syndrome have changed infant care practices and have resulted in a dramatic prevention of infant deaths.³

Education is an art that requires far more than simple conveying of facts. I have been impressed that the following basic principles have lead consistently to successful teaching and thus effective learning:

- Spend sufficient time analyzing true educational need. Don't necessarily teach what you think they need or even what they think they need.
- Preparation takes time and effort, no matter how many times you've previously lectured on a subject. Tailor your presentation to your current audience.
- Never assume that your audience is knowledgeable in your subject. Start with the basics. Then, if the students are beginners, you may take months to progress; if they are sophisticated, you can do it in a few minutes. But always start at the beginning.
- Some repetition is effective. The old adage of, "Tell them what you are going to teach them, then teach them, then tell them what you taught them," really works.
- Change pace. Particularly important issues need emphasis, highlighting, and more time to present and to be absorbed.
- Teach by example. If you don't do what you teach, it doesn't matter what you say.
- If you are going to educate teachers, be certain that they develop a sense of ownership of the program. Otherwise, the program will fall apart as soon as you leave.
- When teaching individuals, use the Socratic Method. Nearly all students have more innate knowledge than you realize; it's simply your job to get it to emerge. Also, challenge will stimulate initiative, which leads to accomplishment, and subsequently to pride and more accomplishment.
- When teaching a subject matter that requires multidisciplinary teamwork (such as neonatal medicine), try to develop a unified educational program that reaches all members of the team simultaneously. Educational group learning will stimulate group problem solving and teamwork after the program is over. When the students have a wide spectrum of educational backgrounds, teach the more sophisticated students how to be teachers of the beginners; both will learn.
- When educating the public, keep the message simple and use as many resources as possible to disseminate the information.
- Give other teachers an effective tool, such as a good textbook or a programmed strategy, and they will welcome it, adapt it to local conditions, and implement it with enthusiasm. But don't be too rigid as to how they might use it. Innovative adaptation is a powerful tool in itself.

¹ Kattwinkel J, Nowacek G, Cook L, Pietrzyk J, Borkowski V, Karasinska-Urbanik O, Molicki J, Godlewska Z, Rozanski B: A regionalized perinatal education programme: successful adaptation to a foreign health care system and language. *Med Education* 31:210-218, 1997.

² Peabody JW, Hesketh T, Kattwinkel J.: Creation of a Neonatology Facility in the Developing World: Experience from a 5-year experience in China. *Am J Perinatology*. 9:401-8, 1992.

³ Kattwinkel J, Hauck F, Keenan M, et al. The changing concept of sudden infant death syndrome: Diagnostic coding shifts, controversies regarding the sleeping environment, and new variables to consider in reducing risk. *Pediatrics* 116:1245-1255, 2005.

⁴ Kattwinkel J., Cook L, Nowacek G, Ivey H, Short J. Improved perinatal knowledge and care in the community hospital through a program of self-instruction, *Pediatrics* 64:451, 1979.

⁵ Kattwinkel J, Cook LJ, Nowacek G, Bailey C, Crosby WM, Hurt H, Short J. Regionalized Perinatal Education. *Seminars in Neonatology*, 9:155-165, 2004.

⁶ Kattwinkel J, Niermeyer S, Nadkarni V, Tibballs J, Phillips B, Zideman D, van Reempts P, Osmond M: Resuscitation of the Newly Born Infant: An Advisory Statement from the Pediatric Working Group of the International Liaison Committee on Resuscitation (ILCOR). Simultaneous publication in *Circulation* 99(14):1927-38, 1999, *Pediatrics* 103:e56, 1999, *Resuscitation* 40(2):71-88, 1999 and *European Journal of Pediatrics* 158(4):345-58, 1999.

⁷ Kattwinkel J. NRP: An Educational Strategy to Improve Outcome from Neonatal Resuscitation. *NeoReviews*. 2:e32-e37, 2001.

ABBREVIATED CURRICULUM VITAE

NAME		POSITION TITLE	
John Kattwinkel, MD Phone: 434-924-5428 E-mail: jk3f@virginia.edu		Charles Fuller Professor of Neonatology Professor of Pediatrics Division of Neonatology	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD
Rensselaer Polytechnic Institute, Troy, NY	BS	1964	Biology
Dartmouth Medical School, Hanover, NH	B Med Sci	1966	Medicine
Harvard Medical School, Boston, MA	MD	1968	Medicine

A. Positions and Honors.

Residency, Duke University, Durham, N.C., 1969-70
 Neonatology Fellowship, Case Western Reserve, Cleveland, 1972-74
 Clinical Associate, Pediatric Metabolism Branch, NIAMDD, NIH, 1970-72
 University of Virginia: Assistant Professor Pediatrics, 1974-78. Associate Professor, 1978-84,
 Professor, 1984-present
 Charles Fuller Chair in Neonatology, University of Virginia, 1998-present

Selected Membership and Honors:

American Academy of Pediatrics
 Neonatal Resuscitation Program Steering Committee, 1988-98; Co-Chair, 1994-98; Editor,
 1998-2010
 Professional Education Award, 1989
 Virginia Child Advocate Award, 1999
 Neonatology Education Award, 2000
 Task Force on Infant Position and SIDS (Chair), 1991-present
 Organization of Neonatal Training Program Directors Council, 1993-03
 American Board of Pediatrics, Neonatal-Perinatal Sub-Board, 1981-86
 American Pediatric Society, 1986-present
 Castle-Connolly, America's Top Doctors 2003-06
 Editorial Boards (recent): *Pediatrics in Review*, 1996-2002; *Pediatrics*, 1999-2004; *NeoReviews*,
 1999-2004
 Discovery Health Channel Medical Innovator in Medicine Award-2004
 National Institutes of Health
 NICHD, Human Embryology and Development Study Section (ad hoc), 1981
 NICHD, Vital Statistics contract, 1985
 NICHD, Multicenter NICU contract, 1985, 1991, 1995
 NHLBI, Newborn sickle cell disease consensus panel, April 6-8, 1987
 NICHD, Collaborative Home Infant Monitoring Evaluation Project (CHIME) Review
 Committee, May 1996
 NHLBI, Research Initiatives for Bronch. Dysplasia, June 18-19, 1991
 NICHD, Relationship of Infant Sleeping Position and SIDS, 1992, 94, 97
 NICHD/FDA Newborn Drug Devel Respiratory Work Group, 2003-04
 NICHD Workshop, "Oxygen in Neonatal Therapies", August 8-9, 2005
 NIH Plain Language Award: "Safe Sleep: Reducing Risk of SIDS," 2005
 Parenting Magazine, Recognition as one of "10 Parenting Leaders," 1997
 Society for Pediatric Research, Member, 1980-present

Zhejiang Medical University, Hangzhou, China. Honorary Associate Professor, 1984-
Who's Who in America, 1990- ; Who's Who in American Education, 2004-

B. Selected education-related publications (from 178 various publications):

- Kattwinkel, J., Cook, L., Nowacek, G., Ivey, H. and Short, J.:** Improved perinatal knowledge and care in the community hospital through a program of self-instruction, *Pediatrics* 64:451, 1979.
- Kattwinkel, J., Cook, L.J., and Nowacek, G.A.:** The team approach to perinatal outreach education in *Perinatal Outreach Education: Methods Evaluation and Financing*. BS Raff (ed.). March of Dimes, NY, 1981.
- Kattwinkel, J., Nowacek, G., Cook, L., Hurt, H. and Short J.:** Perinatal outreach education: a continuation strategy for a basic program. *Am J Perinat* 1:335, 1984.
- Peabody, J.W., Hesketh, T, **Kattwinkel, J.:** Creation of a neonatology facility in the developing world: experience from a 5-year experience in China, *Am J Perinat* 9:401-8, 1992
- Kattwinkel, J., Brooks, J., and Myerberg, D.:** Positioning and SIDS. *Pediatrics* 89:1120, 1992.
- Kattwinkel J, Nowacek G, Cook L, et al:** A regionalized perinatal education programme: successful adaptation to a foreign health care system and language, *Medical Education* 31: 210-218, 1997
- Kattwinkel J, Brooks J, Keenan ME, et al.** Changing concepts of sudden infant death syndrome: Implications for the sleeping environment and sleep position. *Pediatrics* 105:650-656, 2000.
- Bailey, C., Veith, S, Boyle, R., **Kattwinkel, J.,** and Nowacek, G.: Outpatient Perinatal Education Program in 3 vols. Univ. Virginia, 1991-
- Kattwinkel J.** NRP: An Educational Strategy to Improve Outcome from Neonatal Resuscitation. *NeoReviews*. 2:E32-e37, 2001.
- Kattwinkel, J.:** "Perinatal Outreach Education" in *Neonatal-Perinatal Medicine*, 3rd, 4th, 5th, 6th, 7th editions, Behrman, R, Fanaroff, A, and Martin, R (ed.) C.V. Mosby, 1983, 1987, 1991, 1997, 2002.
- Kattwinkel J, Cook LJ, Nowacek G, et al.** Regionalized Perinatal Education. *Seminars in Neonatology*, 9:155-165, 2004.
- Kattwinkel J, Hauck F, Keenan M, et al.** The changing concept of sudden infant death syndrome. *Pediatrics* 2005; 116:1245-1255.
- Kattwinkel J, Perlman JM, Boyle D, et al.** 2005 American Heart Association (AHA) Guidelines for Cardiopulmonary Resuscitation (CPR) of Neonatal Patients. *Circulation*. 2005; 112: IV-188-, *Pediatrics*, 117: e1029-, 2006.
- Kattwinkel J.** Fundamentals of the AAP/AHA Neonatal Resuscitation Program: Evaluating the Evidence and Developing a Consensus. *Journal of Japan Society for Premature and Newborn Med.* (in press).
- Kattwinkel, J., Cook, L.J., Ivey, H.H., et al.:** Perinatal Continuing Education Program. A self instructional program in 5 volumes. University of Virginia, 1978-present. American Academy of Pediatrics (publisher), ElkGrove Village, 2006-.
- Kattwinkel J, ed.** Textbook of Neonatal Resuscitation, 4th and 5th Editions. Elk Grove Village, Ill: American Academy of Pediatrics/ American Heart Association: 2000, 2006.

EXCERPTED LETTERS OF SUPPORT

"Dr. John Kattwinkel is the quintessential clinician scientist, the doctor who cares for the tiniest of the premie babies, the investigator who asks and has answered the basic questions about why their little lungs do not work so well outside the womb and the teacher who engages all of his learners in the answering of these questions. Dr. Kattwinkel's work has substantially changed the way we minister to the tiny premies in our neonatal intensive care units and the way parents around the world place their newborn babies to sleep. He has nurtured babies, their siblings, their parents and their extended families. He has taught endless medical students, residents, faculty and peers with patience and love. ...Dr. Kattwinkel is a teacher of worldly stature. It is my honor to write on behalf of his honoring." **Sharon L. Hostler, MD, Interim Vice President and Dean, University of Virginia School of Medicine**

"Dr. Kattwinkel's research has focused on one of the most important problems in the care of preterm infants: respiratory disease due to immature lungs. He pioneered the use of surfactant, a compound that is needed for air breathing, but is not adequately produced by the fetus adapted to the intrauterine environment. This compound is now used routinely in preterm infants, and has dramatically reduced complications and death in these fragile patients. Dr. Kattwinkel is also a pioneer in medical education.... Dr. Kattwinkel's Perinatal Continuing Education Program has been updated, expanded, and disseminated across the globe. The program has been used by over 80,000 health care professionals in 200 regional centers across the United States as well as by caregivers in Poland, South America, South Africa, and China. In Poland, Dr. Kattwinkel worked with Project HOPE and with over 2,000 physicians, nurses and midwives involving 58 hospitals with perinatal services. In China, he worked again with Project HOPE to develop a Neonatal Intensive Care Unit in Hangzhou, which is now used as a training center for neonatal physicians across China." **Robert L. Chevalier, MD, Professor and Chair, Department of Pediatrics, University of Virginia School of Medicine**

"The Academy, the health care workers who participate in the NRP [Neonatal Resuscitation Program], and the children who ultimately benefit from the program owe a debt of gratitude to Dr. Kattwinkel. His significant contribution of time, expertise, and research efforts speak volumes of his devotion to the advancement of science and his good will and altruism. Dr. Kattwinkel brings great honor and prestige to the pediatric faculty of the University of Virginia." **Errol Aiden, MD, Executive Director, American Academy of Pediatrics**

"Dr. Kattwinkel has a somewhat unique impact on medical education in that he is not known for flashy rhetoric, entertaining anecdotes, etc. Rather his hallmark has always been a very strict adherence to a logical, evidence-based, intellectually honest approach to the topic at hand (long before "evidence-based" became an academic sound-bite). And he demands the same approach from his students, residents, fellows, and faculty. However, when questioning the presenter, he always does so sensitively and in a way that taught these key elements of his approach. In a young specialty plagued by small studies, clinical anecdotes, and personal opinion, John Kattwinkel was a leader who stressed the importance of randomized trials, objective interpretation of results, and intellectual rigor...." **Robert Boyle, MD, Professor of Pediatrics (Neonatology), University of Virginia**

"....Perhaps what most makes Dr. Kattwinkel such an effective teacher is simply his love of teaching. One particular evening in the NICU (Neonatal Intensive Care Unit) stands out in my memory. I was a medical student at the time. We had just received several new admissions...one of the babies admitted was my patient. He needed IV lines but, being just a medical student, I did not know how to place them on my own. I was waiting for one of the

residents to help me when Dr. Kattwinkel offered to help me himself. Being that he was the attending physician, I was surprised that he had not gone home yet, and even more surprised that he was willing to stay another hour just to help me. Soon I realized that his staying late to teach was not at all a burden but a great pleasure. We both scrubbed in and he taught me about the relevant anatomy, showed me the various methods, and patiently talked me through the entire procedure one-on-one. Despite the late hour, his enthusiasm for teaching did not tire. By the end of the night I no longer felt like a burden, rather I felt like his excuse to stay and teach.”
Ashley Logan, MD, University of Virginia School of Medicine alumna, Class of 2006

“...I was his first neonatology fellow at the University of Virginia in 1974, thus my experience with Dr. Kattwinkel exceeds three decades. The essence of a marvelous teacher is the desire to impart knowledge – no matter the venue, no matter the hour, no matter the listener. In this regard, John Kattwinkel is a treasure for the Commonwealth of Virginia. His eagerness, his preparedness, his enthusiasm and his sensitivity are equally present in the following situations: teaching medical students and residents on bedside rounds in a busy newborn intensive care unit; giving hands-on demonstrations to a handful of family physicians and nurses in a small coal-mining town in rural southwest Virginia; explaining pathophysiology of a critically-ill baby one-on-one to a neonatology trainee at 2:00 a.m.; presenting data on the principles of neonatal resuscitation or prevention of Sudden Infant Death Syndrome to a ballroom packed with thousands of attendees at an international conference; and perhaps most poignantly – describing to a distraught family of a tiny, fragile, preterm infant the emotional turmoil associated with going forward with heroic measures and the struggles of decisions associated with withdrawal of support. ...The measure of a great teacher is not the number of conferences given or number of invited lectures – but rather the lifelong enthusiasm, energy, and knowledge imparted on a day-to-day, hour-to-hour basis. In this, John Kattwinkel is a shining example.”
Hallam Hurt, MD, Professor, University of Pennsylvania School of Medicine

“I have had the honor of serving on the American Academy of Pediatrics’ Task Force on Sudden Infant Death Syndrome (SIDS), which has been chaired by Dr. Kattwinkel since its inception in the early 1990’s. Dr. Kattwinkel was a lead author of the 1992 AAP policy statement recommending that infants not sleep on their stomachs. The subsequent national Back to Sleep campaign, which he helped to launch, has resulted in a >50% decrease in the incidence of SIDS in the U.S. It is estimated that more than 20,000 infant deaths have been prevented by this simple intervention....Despite nationwide opposition from health care professionals, Dr. Kattwinkel based the recommendation for back or side sleep position on the published research, not on public or private opinion. The resulting dramatic decline in SIDS is support for the need for more medical policies and practices that are based on the medical evidence rather than tradition or opinion. Dr. Kattwinkel’s continued service on the AAP Task Force on SIDS speaks to his commitment to all infants and their families... His work and perseverance have prevented and continue to prevent thousands of infant deaths.” **Rachel Y. Moon, MD, Goldberg Center for Community Pediatric Health, George Washington University School of Medicine and Health Sciences**

“In addition to making teaching a priority, Dr. Kattwinkel would always focus his teaching on each patient’s current problems. Sometimes he would question a current therapy that we were using. He would cite recent articles as well as key literature to initiate a discussion as to whether the therapy was appropriate. I was impressed by his fund of knowledge, not only of current literature but landmark studies and his ability to incorporate this into his teaching...I felt that Dr. Kattwinkel’s teaching was always very relevant to patient care and was in no way esoteric.” **Amy Hair, MD, Resident, Department of Pediatrics, University of Virginia**

"Dr. Kattwinkel is one of the "Fathers of Neonatology" and as such, we as a UVA community are fortunate to have him... Dr. Kattwinkel would use the physiology that we had learned many years before to help explain why some infants were sick and others were not, and to explain the timing of many of the neonatal disease processes we were seeing. As I moved into a more supervisory role in the NICU, Dr. Kattwinkel continued to teach by example. It was a rare patient that he made the "daily plans" that were decided upon. Instead, after the interns would present their patient, he would turn to me and ask what I wanted to do or change to the intern's plan of care. Initially I stumbled along, but with his prodding I could eventually develop a plan that he agreed with. Before long though, I was doing this without much help. As is his ability to get the best out of everyone, I was soon explaining to the interns why we were doing this and that, explaining much of the physiology that Dr. Kattwinkel had taught me a year before." **John Swanson, MD, Fellow in Neonatology, University of Virginia**

"...He has an amazing perspective of how to change our teaching strategies to fit into the current medical educational environment. I recently overheard a conversation in our residents' library with the first intern saying to another intern, "I can't believe this famous guy [Dr. Kattwinkel] was here for the delivery with me last night and he taught me how to put in a line." The other intern responded, "I know, you would think he would be old school but he's not and he is always jazzed about what he is doing." Dr. Kattwinkel's thoughtful enthusiasm for teaching and his passion for education about neonatology are boundless. He is truly a scholar and a teacher and we are fortunate to have him on our faculty as a teacher." **Linda Waggoner-Fountain, MD, Pediatric Residency Program Director, Department of Pediatrics**

"As the primary author of the PCEP, John organized a vast amount of information into an engaging and effective format for adult learners. However, the most valuable aspect of the program is the manner in which it integrates the healthcare team to function together in assessing problems and finding solutions, whether on the level of an individual patient or on a policy level. The structure of the program truly accomplishes behavior change, the infrequently attained, but ultimate goal of continuing medical education. My files are full of glowing notes from physicians and nurses who have, within days of a PCEP workshop, put to use their new knowledge and skills to benefit children in their communities...As co-chair of the Neonatal Resuscitation Program Steering Committee and later as editor of the *Textbook of Neonatal Resuscitation* and the Guidelines for Neonatal Resuscitation, John has been the motive force behind knowledge integration and cutting-edge educational techniques. Under his chairmanship began the process of evidence evaluation which forms the basis of the Guidelines for Neonatal Resuscitation...Not through promotion, but through spontaneous embracing of the program by perinatal professionals around the world, the Neonatal Resuscitation Program has become the centerpiece of global efforts to reduce neonatal death from asphyxia. Peer-reviewed evaluations of outcome in the United States, India, and China have shown improvement in infant status immediately after birth and reduction in death from asphyxia after implementation of the Neonatal Resuscitation Program." **Susan Niermeyer, MD, Professor of Pediatrics, University of Colorado**

"His educational activities are not limited to the teaching of professionals or to public policy. I have sat in on numerous parent conferences when John was meeting with the parents of a complicated infant in the NICU. His warmth and genuine caring for the parents and the child are obvious, as is his ability to "connect" with families under stress and to help them understand complex medical issues. His national and international acclaim has never interfered with his humanity and compassion." **William G. Wilson, MD, Chief, Division of Medical Genetics, University of Virginia School of Medicine**

ADDITIONAL DOCUMENTATION

JOHN KATTWINKEL, MD

Evaluations by Third-Year Medical Students

In addition to serving as attending physician in the Neonatal Intensive Care Unit, Dr. Kattwinkel also attends on the newborn nursery and "transitional" (intermediate care) nursery services. It is on those rotations that he teaches 3rd year medical students who are assigned to the newborn and transitional nurseries as part of the required Pediatrics Clerkship. His overall evaluation score was "4.7" on a 5-point scale and, after a change in the evaluation system to a 4-point scale, "3.78" on the 4-point scale. Below are excerpted narrative comments provided by 3rd year medical students as part of the end-of-clerkship evaluation.

"Outstanding teacher with vast knowledge of everything neonatal."

"A very extensive knowledge of neonatology and his teachings were useful."

"Really included students in rounds; willing to teach and answer questions."

"Dr. Kattwinkel allowed us to do presentations which helped us learn from each other (and become experts on our topic.)"

"Dr. Kattwinkel did a fantastic job of managing rounds and teaching at the same time. He made time to teach and to encourage independent learning. An outstanding faculty member."

"Should be applauded for his teaching, especially reminding us of physiology."

"Excellent clinician, teaching, and mentor."

"Great model for a doctor who excels in patient care and also in teaching/research."

"Very knowledgeable; was friendly toward students."

"Very intelligent and also kind."

"Learned more with him in 1 week than during the entire rotation."

"The weekends were the best time to get invaluable teaching and he was great."

"He was good to work with."

"Dr. Kattwinkel was a good teacher and spent individual time with us."

"Great teacher and motivator".

"Wonderful teacher. Dr. Kattwinkel was great about teaching during morning rounds. He also was great about giving positive feedback."

"Dr. Kattwinkel was wonderful to work with. I enjoyed my time with him."

"Teaching during rounds was excellent."

"Dr. Kattwinkel does great teaching rounds."

"Did an excellent job in making rounds educational, bringing up important topics which are a common occurrence in pediatrics (hyperbilirubinemia, milk allergy, sepsis, necrotizing enterocolitis, etc.)."

"Very knowledgeable. I liked how Dr. Kattwinkel taught during rounds while discussing a patient with the particular problem."

"I was very impressed with his enthusiasm for teaching."

"Dr. Kattwinkel was a fountain of knowledge."

Evaluations By Pediatrics Residents

Dr. Kattwinkel serves as attending physician on all of the newborn services at the University of Virginia Hospital; in addition to providing patient care, he teaches and supervises pediatrics residents, residents from other services who are assigned to the nurseries, and neonatology fellows on all of these rotations. Using the "5 point scale", his overall average evaluation score by Pediatrics residents was "4.86", as compared to a mean score for all Pediatric faculty of "4.57". His evaluation scores are the highest of any of the faculty of the Division of Neonatology.

Excerpted comments from these evaluations from 2004-2007 are listed below.

"Dr. Kattwinkel is a good role model for someone who, even at the pinnacle of his career, shows great enthusiasm for learning and teaching. He is always asking questions, always interested. I find him very approachable."

"I enjoyed working with Dr. Kattwinkel; he's obviously an expert in neonatology who has many years of experience that he brings to bear in the management of patients. I always appreciated that in teaching about patients, he included the fundamental pathophysiology of a patient's medical problems. And he was always kind and considerate to the housestaff, nursing staff, and families while on rounds."

"It was a good experience. He ensures that rounds include teaching while still ensuring that residents have enough time to complete daily tasks."

"Dr. Kattwinkel teaches during rounds every morning. The information that he presents is interesting and useful. It is clear that he loves to teach and I appreciated the time he took during rounds each morning to go over interesting, practical, and evidence-based topics."

"Dr. Kattwinkel has an overwhelming amount of knowledge and experience. He shares his knowledge easily at the bedside and is a very effective teacher."

"Dr. Kattwinkel does a lot of great teaching during rounds, both for the benefit of the medical students as well as the residents. He challenges us to think more about the "why" of what we do instead of just accepting the status quo, and that is a much-needed skill."

"Dr. Kattwinkel is always eager to teach us and I learned a lot of things from him I think he really plays a role model as a physician and as an advocate and a lifelong learner."

"Dr. Kattwinkel is a wonderful teacher and mentor in the NICU. He does a great job at teaching "critical thinking"- asking provoking questions while always showing respect to students and residents."

"Always prompt and on time for rounds- I love it! Teaching at every turn- for students and residents alike. A great teacher and role model physician."

"I learned a lot from working with Dr. Kattwinkel in the transitional nursery. His wisdom and compassion for patients were wonderful to see."

"Dr. Kattwinkel is an enthusiastic teacher and obviously loves what he does. As an upper level, I learned much from his extensive experience and knowledge base."

"Dr. Kattwinkel was very good at providing key teaching points during rounds and especially at explaining especially at explaining the underlying physiology behind many common conditions."

"A living legend. Shares willingly his broad depth of knowledge."

"One of the best teachers in the Department".

"Fantastic teacher who has a unique way of applying the 'big picture' to routine, daily management of patients. In other words, sees the forest, but appreciates each tree. Teaches insight and clinical decision-making with gusto."

"Enjoyed working with Dr. Kattwinkel. Very enthusiastic teacher and pleasant demeanor. Always willing to listen and addresses problems efficiently and quickly. Very assertive in patient management. A positive role model."

"Very challenging questions asked to provoke the resident to further formulate treatment plans which stretches the residents to think independently, helps the residents to make own decisions."

Additional comments from John T. Casteen, III, President of the University of Virginia

"I am pleased to submit John Kattwinkel for the 2008 Virginia Outstanding Faculty Awards Program. Dr. Kattwinkel demonstrates a passion for the profession in all that he strives to accomplish as a teacher-scholar in the University of Virginia community and in the world at large. The dean of his school, Provost Garson, and I owe Dr. Kattwinkel a debt of gratitude and heartily endorse this nomination."