Jennifer Sinclair Curtis
of the University of Florida

NICHOLAS PEPPAS
The University of Texas
GINTARAS REKLAITIS
Purdue University
ERIK YDSTIE
Carnegie Mellon University

Professor Jennifer Sinclair Curtis of the University of Florida celebrates 20 years of an academic career that has made her not only an internationally known researcher and educator, but also a great role model for younger generations of chemical engineers. During her life, she has faced family adversities and almost insurmountable crises. But through her perseverance and convictions, as well as a deep Christian faith, she has triumphed. She has touched many others with her concern, enthusiasm, and dedication. She is now recognized as a leading figure in the chemical engineering profession.

Jennifer is a wonderful educator recognized with numerous teaching awards, a student counselor *par excellence*, and a leading administrator (with two chairmanships—one in Freshman Engineering at Purdue University and another now in Chemical Engineering at the University of Florida—as well as service as an associate dean of Engineering at Purdue). She is a national leader in numerous societies, including AIChE where she has been a major motivating force of the Particle Technology Forum, and as a recently elected AIChE director. But Jennifer Curtis is also the internationally known leader in particle technology, an innovative engineer, and a scholar. Along with all these achievements she enjoys a wonderful family life with her husband, Barry Curtis, and her children, Jennette and Derek.

THE EARLY YEARS

Jennifer is a product of the rich Midwestern tradition of hard work and appreciation for education. She was born Jennifer Lynn Doloresco, the daughter of Jerry Doloresco and Carolyn Stortz Doloresco, on Christmas Day 1960 in Cincinnati, OH. Her father enlisted in the Navy immediately after high school to acquire enough money to go to Miami University of Ohio. He received a B.S. in accounting in three years—a necessity because he didn't have enough money to go for a longer period of time. Nicholas Peppas remembers, "Jerry Doloresco was especially happy when Jennifer went on to graduate school and received her Ph.D. from Princeton University. He was sad that he could not afford more education himself but he was so happy his children (Jennifer and her brother, Bryan Doloresco) could. I guess this is a pretty common story from the generation before ours that grew up in the post-Depression period. Jerry was a loving father, always proud of Jennifer's achievements. We kept frequent correspondence, and he was particularly proud when Jennifer started her academic career at Carnegie Mellon University." Jerry passed away from cancer in 1995, when Jennifer was 35. Jennifer's mother, Carolyn, is of German descent and still lives in Cincinnati. This marvelous mixture of Italian and German background has given Jennifer her wonderful enthusiastic spirit and optimism that everything will go well, but also her dedication—bordering on stubbornness—to achieve her goals

Jennifer graduated from Northwest High School in Cincinnati in May 1979 as valedictorian of her class. Having worked in a summer job at Procter & Gamble, she was sure she wanted to become a chemical engineer and enrolled in the School of Chemical Engineering at Purdue in the fall of 1979. While taking Honors Chemistry during her freshman year she met fellow student Gavin Sinclair. They started dating in their sophomore year and were married in 1981.

At that time, the School of Chemical Engineering at Purdue had instituted a new advising program for all students. Each professor was in charge of 30 undergraduates with full responsibility for advising and registration.

Nicholas Peppas remembers, "I was a young associate professor, just in my third year at Purdue, and I had been assigned my first advising group of 30 incoming sophomores. My first advisee was Jennifer. And to the door of my office at CMET 210A came this shy 19-year-old with golden locks, holding an already-filled-out departmental class registration form. Without even stepping into the room she extended her right hand and announced 'Here is my form, please sign it.' I asked her to come in with the explanation that I'd like to learn more about her family and educational background, as well as her future goals. We ended up talking for an hour. I was truly impressed with her intellect and enthusiasm. My intrigue was similar to that of, say, a collector who finds a rare art object. There and then we decided that Jennifer would start doing research with me during her sophomore year."

Jennifer's performance at Purdue was stellar. She was selected a top sophomore woman in engineering in 1981, a top junior woman in engineering in 1982, and a top senior woman in engineering in 1983. She received an Olin Fellowship for undergraduate research, the first prize of the 1983 University of Akron Polymer Engineering competition, and a best paper award at the Mid-Western regional AIChE competition at Dayton, OH, in 1983. In addition, she received the Best ChE Senior award in 1983. She graduated in May 1983 with "highest distinction," the Purdue equivalent of a *summa cum laude*. Next to her was another graduate—her husband of two years Gavin Sinclair, who had achieved the impossible, *i.e.*, to be awarded *two* difficult degrees (management and ChE) in four years. While at Purdue, Gavin published his first paper, on the analysis of drug release mechanisms from swellable polymers. The paper was published in 1983 in the *Journal of Membrane Science* and has been cited more than 200 times.

Not unexpectedly, the question of graduate education came up very early in Jennifer's undergraduate studies, and the possibility of an academic career had appeal as early as 1980. So, that fall Jennifer started working with Nicholas Peppas on a project that led to a two-year collaboration, her first two publications, and her first exposure to fluid mechanics and mass transport. The project involved the development of the first advanced models of non-Fickian and anomalous transport in glassy polymers with consideration of the relaxational effects

Jennifer in third grade, left, and with her dad, Jerry Dolo-resco, when she was finishing high school in 1979, below. Opposite page: Jennifer with fellow researchers in her lab at the University of Florida.

of the macromolecular chains and the associated anomalous transport. The problem had been addressed by others with the addition of a pseudo-convective term (resulting from the relaxational effects) until Jennifer's model set the physics correctly, recognizing the importance of the moving boundary value problem (glassy/rubbery transition and erosion fronts). The paper, "Anomalous Transport of Penetrants in Glassy Polymers," published in *Colloid and Polymer Science* almost 25 years ago [**261**, 404-409 (1983)] has received 180 citations and is one of the most cited articles in the history of this journal. Another paper was published in the *Proceedings of the International Congress of Rheology of 1984*, where the work had been presented.

Planning for graduate school included some long evening discussions between Jennifer and Gavin. Jennifer had received an NSF Fellowship and was clearly interested in a university with a scholarly reputation where she could continue working on transport phenomena. The choice came down to Princeton University or the University of Pennsylvania—where Doug Lauffenburger had put together a great academic and research program and was particularly successful in attracting a wonderful group of exceptional women chemical engineers. Finally, Jennifer picked Princeton, but Doug has remained a great supporter and mentor throughout her life.

GRADUATE SCHOOL AND FAMILY

Jennifer started at Princeton University in 1983, while Gavin was employed a state away—at Air Products in Allentown, PA! They decided to live in Flemington, NJ, which meant that every day Jennifer had to drive 50 minutes each way to school at Princeton. In the demanding classes there, she met a number of other successful chemical engineers who have remained good friends, including Paul Johnson (now dean at Arizona State University), Harry Ploehn (now at the University of South Carolina), and Spyros Anastasiadis (now at the University of Thessaloniki, Greece). At Princeton, she had many inspiring teachers such as Carol Hall, Bill Russell, and Roy Jackson. Her rapport with the latter was exceptional; he became the main advisor of her Ph.D. thesis, entitled "Vertical Transport of Gas and Solids with Radial Solid Density Variations." It was published—among others—in a seminal issue of the *AIChE Journal* in 1989 ["Gas-Particle Flow in a Vertical Pipe with Particle-Particle Interactions," *AIChE J.* (1989) **35**, 1473–1486]. It's one of the 50 most cited papers in the history of the journal.

While she was in graduate school, Jennifer and Gavin decided to start a family. Nicholas Peppas remembers, "In October 1985 Jennifer called me with the good news she was expecting her first child. And it was just two months later that she called me back to share the terrible news that Gavin had been diagnosed with cancer, probably in the lungs, although that was not clear yet. We spent several days and many hours talking about doctors and possibilities and we ended up with the solution of Sloan-Kettering, where Gavin was indeed saved after more than six months of treatment. I will never forget that in all these months, with her graduate research, her commuting almost two hours a day, and her being pregnant, Jennifer did not sound weak even for one minute. I never heard or saw her cry, complain, or give up. This was an incredible lesson for me and for all of us around her." Indeed, Jennifer was able to face these family crises because of her deep faith and Christian beliefs that have given her strength all her life.

Fortunately, 1986 was a much better year! A daughter, Jennette, was born in April and the couple was reunited after the completion of Gavin's surgery and many treatments. Gavin went on to write a book, *All Things Work for Good* (based on Romans 8:28), about his cancer experiences, focusing on the many lessons he learned and how his Christian faith was strengthened. As for Jennifer, these were the days when she began to master the art of juggling family, career, and life.

Her major professor in those days, Roy Jackson, a member of the Royal Society, is now retired and lives in North Carolina. He remembers, "As you may know Jennifer was working for her Ph.D. in my group at Princeton at the time her husband, Gavin, was diagnosed with cancer and a very grim prognosis. At the same time she was pregnant with their first child, so the pressures on her were enormous. In addition she was working on the problem of predicting, in detail, the behavior of gas-particle flows in vertical tubes. The behavior of these flows turned out to have an unexpectedly complex (and interesting) structure, whose details were revealed only by meticulously careful computation and interpretation. In this she succeeded brilliantly, despite everything else weighing on her mind at the time. Her resilience and cheerfulness were simply amazing."

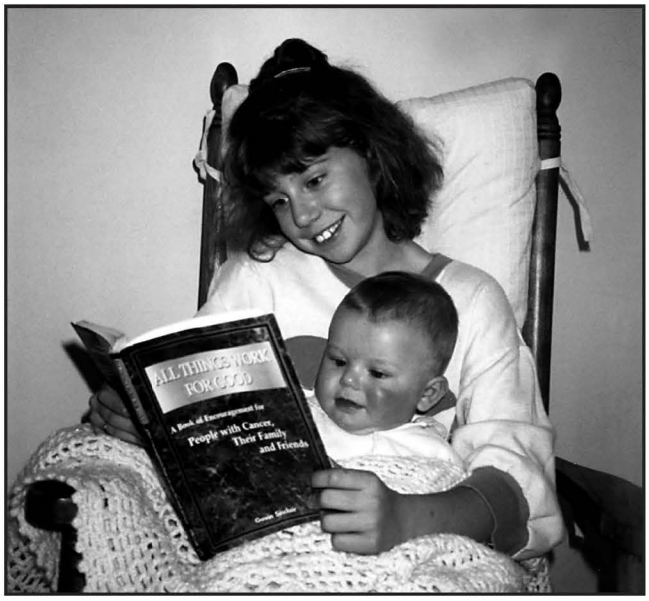
Winning the 1989 Lafayette College Teaching Award (pictured with students Paul Verderber and Dave McVeigh).

He continued, "After graduation the demands of her career still had to be balanced against difficulties associated with Gavin's health. But, in spite of this, her reputation grew steadily and I was proud to follow her progress. She is an amazing woman who combines academic ability and administrative competence with a warm and friendly personality that has made her so many friends. Of my many academic 'children' she is, perhaps, the one in whom I take the greatest pride."

AN ACADEMIC CAREER IN THE SERVICE OF STUDENTS

In August 1987, while still a graduate student at Princeton, Jennifer answered the calling to teach. As the family could not leave the area because of Gavin's medical insurance (the dreaded "pre-existing condition"), she accepted an offer from Lafayette College and began teaching as an assistant professor in that school's Department of Chemical Engineering. She stayed there until December 1989, one semester after her formal graduation from Princeton. During her years at Lafayette she became the master teacher and educator that she is, winning numerous teaching awards.

As an educator, she taught a wide range of courses such as Separations, Transport, Transport Lab, Fluid Mechanics, Heat and Mass Transfer, Control, Fortran, and Differential Equations. To these courses she later added Kinetics, Advanced Transport (grad level), Advanced Math (grad level), Fluid Mechanics, and Heat and Mass Transfer at Carnegie Mellon;



Jennette reads Daddy's book, All Things Work for Good, *to Derek (early 1996).*

Kinetics, Fluid Mechanics, and Control at the University of Arizona; and Materials and Energy Balances, Particulate Systems, and Transport Phenomena at Purdue University.

By 1989, Gavin's medical condition had improved and he was able to move to a new location—Pittsburgh—where he was employed by PPG Industries. Jennifer interviewed and was offered a position as an assistant professor at Carnegie Mellon University. Nicholas Peppas remembers again: "She was truly excited with the opportunities at CMU. In December 1989 she flew to Indianapolis and we spent three wonderful days in our home—Jennifer, Lisa, and I, planning the future, defining new problems, and talking about possible collaborations on biomedical applications of micro- and nanoparticles. I could see the future leader of particle technology in all her intellectual glory."

AT CARNEGIE MELLON

At CMU, Jennifer found a truly exceptional faculty with colleagues who provided the scholarly environment for her professional development. During the interview process she was particularly affected by then Head of the Department John Anderson (now president of IIT in Chicago) as well as by colleague Ignacio Grossmann. Anderson remembers, "When I first met Jennifer during her interview at Carnegie Mellon, I knew she was not only an excellent scholar and teacher but also a future academic leader. She has proven me correct. She leads by example, and her enthusiasm is infectious. The way Jennifer has handled her personal and professional lives provides a role model for all of us."

In a short amount of time Jennifer developed new courses and attracted first-rate research students, such as Eduardo Bolio, who is currently working for McKinsey in Siberia, and Christine Hrenya, who is an associate professor at the University of Colorado in Boulder. The students helped her develop a strong research program supported by industry and government. Ignacio Grossman remembers that "Jennifer was the strongest and most popular teacher in the department, and received the highest scores on student evaluations. This is especially noteworthy because she was teaching core courses like Mathematics for Chemical Engineers and Heat and Mass Transfer." She also started to give invited seminars and research presentations outside the department while engaging herself in university and professional service. While chair of the undergraduate committee, she conceived a plan and raised funds for a new computer cluster for undergraduates. The computer cluster is still a very popular and well used place for students to work and meet. While the computers have been upgraded many times since, credit for the initial concept goes back to Jennifer's ingenuity.

"Jennifer managed to do all of this, not only extremely well, but always with a big smile, and while placing the majority of her attention on her husband and children," writes Grossmann.

Erik and Genevieve Ydstie moved to Pittsburgh in 1992 when he joined the CMU faculty, and they made a point of moving into the same neighborhood as Jennifer and Gavin.

"We have a daughter in the same age group as Jennette and we wanted to spend time together," Erik Ydstie remembers. "We knew we could not go wrong as far as location was concerned—Gavin and Jennifer had done extensive research and had even written a computer program to take as many considerations into account as possible to help in their housing-decision process! We have many fond memories of good family times spent together after church and late evenings discussing politics and all manner of other things."

Yet in the mid-1990s, after Jennifer received promotion to associate professor at CMU, happy times gave way to worries once again. There was some deterioration in Gavin's health, especially due to the cold winters in Pittsburgh. Grossmann notes, "I still recall the day that Jennifer walked into my office, closed the door, and let me know she was leaving for Arizona because Gavin's health required that he live in an environment with dry air. Despite the fact that her departure was a big setback to our department, I admired how she was able to put her family's priorities above her professional ambitions. This to me speaks volumes of Jennifer's integrity, and her great dedication to her family and her profession."

In 1995, the family moved to Tucson, where Gavin continued to work for PPG remotely and Jennifer became an associate professor at the University of Arizona—whose ChE department was under the expert leadership of Tom Peterson, now dean of Engineering. The relocation rounded out happily with the birth of Jennifer's and Gavin's son Derek in early 1996.

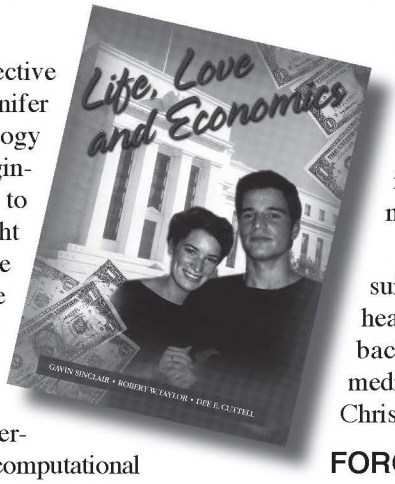
But while Tucson was a great place for Gavin's health, and Jennifer's career continued flourishing, the remote work with PPG could not continue and medical insurance problems resurfaced. It was extremely difficult for Gavin to get insurance from a new company due to his pre-existing condition. And that's when Gavin and Jennifer remembered their roots.

THE PURDUE YEARS

In summer 1997, Jennifer and Gavin returned to Purdue to launch the next phase of their careers—she as a tenured associate professor and he as an assistant professor in organizational leadership and supervision as well as in agricultural economics. Although he was physically limited due to the many health problems he faced, Gavin had completed a master's degree in economics at Lehigh University while working full time at Air Products, and then completed a Ph.D. in social and decision sciences at Carnegie-Mellon while working full time at PPG.

Above, the Sinclair family (Jennette, Jennifer, Gavin, and Derek) on a 1998 Caribbean cruise. An annual cruise has remained a tradition for Jennifer and her family. Initially they were all Caribbean cruises, but then they became Alaskan and more recently Mediterranean journeys as well. Below, Gavin Sinclair's textbook, Life, Love and Economics, *which was featured in* Newsweek *magazine in May 2000 and on the front page of* The Wall Street Journal *in October 2000.*

This dual-academic-career couple immediately set about having an impact on their respective departments and students. In spring 1998, Jennifer launched a survey course in Particle Technology (described in a *CEE* article in fall 1999). Beginning in 2000, this course was video broadcast to include industrial audiences, and it was co-taught with Carl Wassgren (M.E.) from 2002 on. The initiative has continued to flourish, with Mike Harris taking up the course when Jennifer no longer could.



In 1999, Jennifer was elected trustee of CACHE (Computer Aids for Chemical Engineering), where she championed the introduction of computational fluid dynamics (CFD) into chemical engineering teaching (see her *CEE* article in spring 1998). It was through her initiative that Rodney Fox and Dick LaRoche were elected to the CACHE board to further promote this domain in chemical engineering research and education.

In fall 2000, while Gavin launched his book, *Life, Love and Economics*, based on his very successful introductory economics course, Jennifer launched the administrative component of her rapidly accelerating career: She accepted the position of head of Freshman Engineering, leading a department that was home to some 2,200 beginning engineering students. She took on this major challenge with her usual optimism and can-do style, re-energizing the staff, recruiting new faculty, and rallying the first-year students to overcome that big transition to college. She was remarkably adept at soothing the concerns of parents while encouraging their sons and daughters to work hard but also find time for campus activities. She was also very effective at both attracting new resources and capitalizing on those the department had. She worked closely with an Industrial Advisory Council for Freshman Engineering that helped to refocus that department's strategic directions to its central role of preparing students for success in the professional schools. The chair of that council, Bob Davis (Air Products & Chemicals) comments on her effective leadership style: "Jennifer added energy to everything she touched. Her real gift was empowering all the members of her department so that the resources of the department were seemingly multiplied. The impact on results and morale was remarkable!"

Sadly, into this whirlwind of positive pursuits came a devastating downturn: Gavin's health deteriorated again, and he was moved back to Tucson because of the excellent medical facilities there. He passed away during Christmas 2000.

FORGING ON

Jennifer's optimistic outlook prevailed. In spite of her many administrative duties and the never-ending meetings, she continued growing her research group to 10 solely or jointly advised graduate students. In Fall 2001 she was promoted to full professor and shortly thereafter (March 2002) she was named the associate dean of the College of Engineering with

responsibility for Undergraduate Education, *while* continuing her duties as head of Freshman Engineering. And, of course, the particle technology course had to go on as well! In her associate dean role, Jennifer was instrumental in setting the stage for the reorganization of the Freshman Engineering Department and the subsequent launch of a new Department of Engineering Education, the first in the United States. Other challenges included restructuring and restaffing the Minority Engineering Program, the Women in Engineering Program, and the Cooperative Education Program. Her highly effective leadership in engineering education was recognized through the 2003 Sharon Keillor ASEE Award for Women in Engineering Education. By fall 2003, it was clear that Jennifer was ready to move on to further challenges—to the good fortune of the University of Florida. Without question, her Purdue years spanned a very productive phase of her professional life as teacher, researcher, and academic leader, but also involved very low as well as high points in her personal life. She remains a valued colleague and has certainly left her impact on Purdue Engineering.

AN INTERNATIONALLY KNOWN RESEARCHER

Throughout her academic career, the impetus for Jennifer's energy and creativity has been her attraction to, and thus seminal contributions toward, key research issues. In this area, she has contributed on manifold fronts both on a national and international scale.

Jennifer has an internationally recognized research program. Her work in the development and validation of numerical models for the prediction of gas-solid flow phenomena is in an interdisciplinary research area of both great technological and commercial importance. Particle flow processes are encountered in the pharmaceutical, chemical, mining, agricultural, food processing, and petroleum industries. Jennifer has received various awards for her pioneering work in this area. One of her most notable successes is the adoption of her multiphase flow models by the two key commercial CFD software-package vendors. Both companies—Fluent and CFX—have adapted her models for dilute and dense-phase gas-solid flow in software that is used internationally by both academic and industrial experts.

Jennifer received the NSF Presidential Young Investigator Award and an engineering college research award when she was a professor at Carnegie Mellon University. Also early in her career, she was awarded NSF equipment grants that funded the purchase of important equipment such as a laser Doppler velocimeter—a purchase that helped her propel her early research program further toward the leading edge of science.

Graduate Students Who Did Their Theses With Jennifer Curtis

1. John Doney, ChE, M.S., Carnegie Mellon University, "Heat Transfer in Dilute Particle-Laden Turbulent Flows," 1993
2. Eduardo Bolio, ChE, Ph.D., Carnegie Mellon University, "Dilute Turbulent Gas-Solid Flows with Particle-Particle Interactions," 1994
3. Christopher Alexander, ChE, M.S., Carnegie Mellon University, "Pneumatic Transport with a Bimodal Particle Size Distribution," 1995
4. John Doney, ChE, Ph.D., Carnegie Mellon University, "Electrostatic Behavior of Charged Particle Mixtures," 1996
5. Christine Hrenya, ChE, Ph.D., Carnegie Mellon University, "Dense Gas-Solid Suspension Flow,"1996; 1997 recipient of Best Ph.D. in Particle Technology by the International Particle Technology Forum (Dr. Hrenya is now associate professor of chemical and biomolecular engineering at the University of Colorado)
6. Pawan Agarwal, ChE, M.S., The University of Arizona, "Modeling Gas-Solid Flow with a Bimodal PSD," 1997
7. Michael Schabel, Materials Science, M.S., The University of Arizona, "Characterization of Particle Traps in Plasmas," 1997
8. Tim Mallo, ChE, Ph.D., Carnegie Mellon University, "Modeling Heat Transfer in Dilute and Dense Phase Gas-Solid Flow," 1997
9. Berend van Wachem, ChE, Ph.D., Delft University, "Flow in a Fluidized Bed with a Bimodal PSD," 2000 (Dr. van Wachem is now associate professor at Chalmers University, Gothenburg, Sweden, Department of Applied Mechanics)
10. Cynthia Blake-Powell, ChE, M.S., Purdue University, "Comparison of Ad-Hoc Theory Predictions and CFD Predictions for Confined, Recirculating Flows," 2000
11. Agus Sumantri, ChE, M.S., Purdue University, "Comparative Analysis of Computational Fluid Dynamic Models for Gas-Solid Flow in Risers," 2000
12. Edward (Nick) Jones, ChE, Ph.D., Purdue University, "The Effect of PSD on Gas-Solid Flows," 2001
13. Chie Min Chung, ChE, M.S., Purdue University, "CFD Modeling of a Fluidized Bed with a Wide Particle Size Distribution," 2002
14. Stephanus Budilarto, ChE, Ph.D., Purdue University, "Experimental Study of Velocity Ratio, Particle Size and Size Distribution Effects in Particle-Laden Jet Flow," 2003
15. Kim Hayden Henthorn, ChE, Ph.D., Purdue University, "The Effect of Particle Roughness on the Flow Behavior of Fine Powders," NSF Graduate Fellow, 2004 (Dr. Henthorn is now assistant professor in chemical and biological engineering at University of Missouri-Rolla)
16. Kunn Hadinoto, ChE, Ph.D., Purdue University, "Dense-Phase Flow Measurements using LDV," 2004 (Dr. Hadinoto is now assistant professor in chemical and biomolecular engineering at Nanyang Technological University)
17. Michael Lasinski, ChE, Ph.D., Purdue University, "Particle Clustering in Granular Flows," 2004 (co-advised student)
18. Bill Ketterhagen, ChE, Ph.D., Purdue University, "DEM Simulations of Granular Discharge from Hoppers," 2006 (co-advised student)
19. Robert Hamilton, ChE, Ph.D., Purdue University, "Evolving Particle Size Distribution in the Flow of Gas-Solid Mixtures," (1999 -) (co-advised student)
20. Benjamin James, ChE, Ph.D., University of Florida, "Effect of Particle Shape on Particle-Phase Stress," (2004 -)
21. Mark Pepple, ChE, Ph.D., University of Florida, "LDV Measurements of Liquid-Solid Flow," (2004 -)
22. Anshu Anand, ChE, Ph.D., University of Florida, "Effects of Particle Cohesion and Shape on Particle Segregation in Hopper Flows," (2005 -)
23. Julio Cesar Castro Vazquez, ChE, Ph.D., University of Florida, "Effect of Wall Roughness on Wall Friction Angle," (2006 -)
24. Juan Pedro Marval, Departamento de Energética, Universidad Nacional Experimental Francisco de Miranda, Punto Fijo, Edo. Falcón, Venezuela, "Numerical Simulation of Saltating Particles using Granular Kinetic Theory," (2006 -) (co-advised student)
25. Byung Chu, ChE, M.S., University of Florida, "Experimental Measurements of Sifting Segregation in Hoppers," (2005 -)

Right: At Carnegie Mellon University with John Anderson and Ignacio Grossman in 1995. Below: In Australia with a friend in 2005. Facing page: Jennifer, Derek, and Barry celebrating Jennette's graduation from her parents' alma mater, Purdue University, in May 2007.

The importance of her research has been validated through multi-year funding from major corporations such as Chevron, DuPont, Alcoa, Dow, and Pfizer. Jennifer consults for a wide range of organizations. She has also served as one of five academic participants in a U.S. Department of Energy–Office of Industrial Technology Consortium on Multiphase Phase Flow. This consortium involved collaboration between industry, academia, and national labs. It received national recognition, and as part of it Jennifer gave a panel presentation before Congress in 1999.

Jennifer is a popular speaker not only for scientific but also inspirational talks. In her academic career, she has given more than 180 invited lectures.

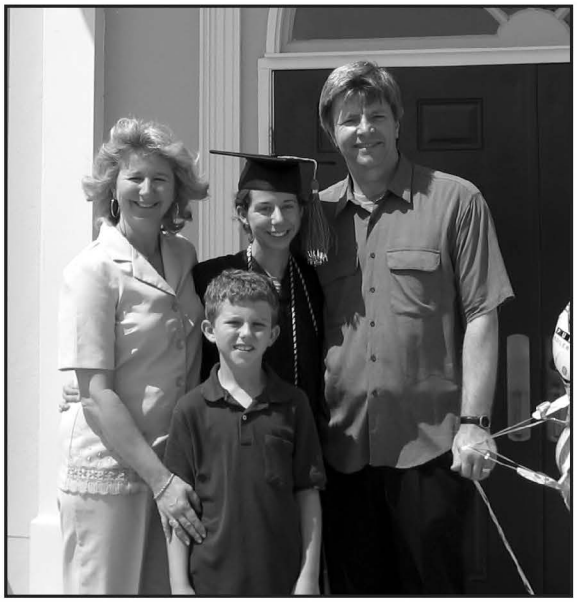
Over the years, she has served the scientific community in various positions. For example, she served on the Board of Directors for the American Chemical Society–Petroleum Research Fund (ACS–PRF), as a member of an NSF-organized delegation to South Africa promoting collaboration in particle technology, as a member of an external review panel to review the entire Chemical and Transport Division of the NSF, as a member of the editorial advisory board of the *Journal of Powder Technology* and the *Journal of Pharmaceutical Development and Technology*, and since 2007 as associate editor of the *AIChE Journal*. Within AIChE, she served as the national meeting co-chair, along with Gintaras Reklaitis, for the 2002 Annual AIChE Meeting that was held in Indianapolis. She was elected to the executive committee of the Particle Technology Forum for eight years and to the AIChE Fluid Mechanics Programming Committee for four years, and was chair of the Transport and Energy Processes Division in 2006. A unique contribution to the annual chemical engineering meetings has been her continuous leadership and support (with Rosanne Ford of the University of Virginia) of the Christian ChE Fellowship meetings that are held on Tuesday or Wednesday mornings of the AIChE meetings. These meetings were initiated in 1989.

AN EDUCATOR, ADVISOR, AND MENTOR

Jennifer is a highly effective teacher and mentor. She received departmental and university teaching awards while at Lafayette College and the University of Arizona. At Purdue, she received the departmental Kimberly Clark Mentoring Award and was named to the university-wide Teaching for Tomorrow Program. In 2001, Jennifer served, along with then Purdue Engineering Dean Linda Katehi, on a 10-member invited NSF panel on the Future of Engineering Education. From 2003–2006, she also served on the NAE's Engineering Education Committee. She is very active in training new chemical engineering professors. She has participated as an instructor for new chemical engineering educators at the American Society for Engineering Education's Chemical Engineering Summer School, held every five years. In 1997, she served as a lecturer at this workshop. In 2002 and 2007, she organized and conducted a very well attended workshop on CFD.

In August 2000, when she was named head of Purdue's Freshman Engineering Department, she embarked upon attending a series of workshops that better prepared her for administration. For example, in 2001 she attended the two-week Management Development Program at Harvard University and in 2002 the American Council on Education's Chairs and Deans Workshop.

As a Ph.D.-student advisor, Jennifer has excelled by transferring to her students the same style and the same warm concern that Roy Jackson, her Ph.D. advisor at Princeton, had transferred to her. Her former Ph.D. student Kimberly Hayden Henthorn—now an assistant professor in chemical engineering at the University of Missouri-Rolla—remarks, "I think the thing that impressed me most about Jennifer was her leadership style—she led by example. She kept her graduate students motivated and working hard by showing us that she was working just as hard as (and sometimes harder than) we were."



Naturally, Jennifer has not only been an exceptional engineer, researcher, and educator, but also a wonderful role model for the young generation of women chemical engineers. More than 20 years ago, she had the fortune to find a great role model in distinguished ChE and NAE member Carol Hall, then at Princeton. And many years later, Jennifer is now recognized as an example for others. Again, Kim Hayden Henthorn notes: "Having a strong, female role model like Jennifer has made a tremendous impact on me. She has been through so much, but has kept an upbeat, positive attitude throughout. When I feel overwhelmed trying to balance everything on my plate, I always remind myself that Jennifer has been through all of this before, and I give her a call. She is still willing to listen and give good, thoughtful advice about everything from family life to being a woman in academia."

Christine Hrenya, another former Ph.D. student of Jennifer's and now an associate professor at the University of Colorado, admires Jennifer's ability to focus and be successful. "Jennifer is incredibly productive, but she has an unfair advantage over the rest of us—she only needs four to five hours of sleep per night, and this is her longtime average! Along the same lines, she is an expert at multitasking. Once when I was visiting her house for dinner, she promptly pulled out the ironing board when dinner had finished (though perhaps I *was* overstaying my welcome!)." This is the love and admiration shown by her students. And Hrenya concludes: "On a more serious note, Jennifer was an outstanding advisor, and continues to be a role model, friend, and sounding board for all topics under the sun. I am extremely fortunate to have spent so many of my formative years under her guidance."

A NEW LIFE AT THE UNIVERSITY OF FLORIDA

In 2001 Jennifer met Barry Curtis, another Purdue chemical engineer, who had graduated two years before her (in 1981), having done the five-year co-op program. Jennifer comments, "I met Barry for the first time at a Purdue Chemical Engineering Industrial Advisory Board dinner in Houston. Jeff Hemmer then hooked us up on a strategic planning project for Freshman Engineering, when I was head of that department."

The rest is history. They were married in 2002 and moved to Gainesville in 2005. Barry has been a wonderful father to Jennette and Derek and a most supportive and admiring husband and partner to Jennifer.

Just before the move to Florida though, the family took yet another trip—to Australia! Jennifer was a visiting professor at the Chemical Engineering Department of Monash University in Melbourne in 2005, received the Eminent Overseas Lectureship Award from the Institution of Engineers in Australia, and visited a number of Australian universities for seminars.

In 2005, Jennifer Curtis assumed a new responsibility as the chair of the Department of Chemical Engineering at the University of Florida. In a very short time, she has taken an already nationally recognized program (achieved under the continuous and imaginative leadership of the editor of this journal, Tim Anderson) and further improved its national ranking.

Here is how Anuj Chauhan, associate professor in this department, sums up the thoughts of the younger generation of professors there: "Jennifer runs the department in a very fair, transparent, and efficient manner. She is helpful to the entire faculty, particularly the juniors, and she deserves a lot of credit for the rapid growth of the department and the improvement in rankings."

At the University of Florida Jennifer keeps an active research program and collaborates with the nationally known ERC program on particle technology.

Meanwhile, the Sinclair Curtis family is thriving. Derek is now 11 years old and in sixth grade. Jennette attended Purdue in the School of Management—the same school from which her father graduated 24 years earlier—and received her B.S. in management in May 2007 with highest distinction (a perfect 4.00). She is now a graduate student at Michigan State University, specializing in organizational behavior. Like her parents, she wants to become a professor.

Looking back at Jennifer Curtis's life and accomplishments, one cannot help but admire her concern for others, her high standards, and her dedication to education and advising. But one cannot forget the adversities she has faced in her life. As Nicholas Peppas likes to point out: "At some time or another all of us have had crises or adversities in our lives. How Jennifer was able to cope with them has been an inspiration for all of us. I think Jennifer, Barry, and the children have found the golden rule of a good, inspiring, and productive life. They are a wonderful example that *all things work for good*." ❐