



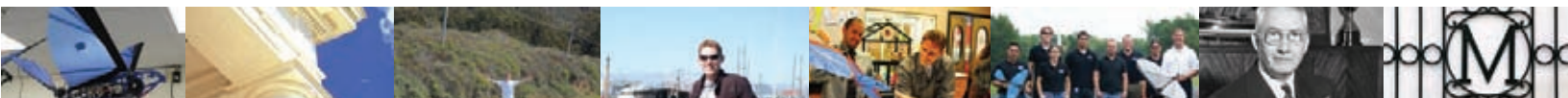
A special publication
Honoring the Life and Work of

ALEXANDER BROWN

AEROSPACE ENGINEERING
A. JAMES CLARK SCHOOL *of* ENGINEERING



ALEXANDER BROWN
1986-2011





Dear friend, colleague, student, son and brother, Alexander Brown, passed away on May 13th 2011 after a sailing accident in the James River.

Alex was born on October 24th 1986 in Bethesda, MD, and graduated from Frederick High School in 2004. He attained the rank of Eagle Scout through the Boy Scouts of America Troop 792. He attended the University of Maryland, where he graduated in 2008 with a Bachelor of Science in Aerospace Engineering with honors and completed a Master of Science in Aerospace Engineering in 2010 and was currently pursuing his Ph.D.

Alex received many honors during his education: the Aerospace Engineering Department Honors Program, Primmannum Honor Society, the Clark Corporation Partners Scholarship, and the 2011 M. L. Drews Scholarship. He was also awarded a National Science Foundation GOALI Grant, and a UMD Aerospace Graduate Research Assistantship. Alex was a member of the National Society of Collegiate Scholars, Sigma Gamma Tau (National Aerospace Engineering Honor Society), and the Vice President of American Institute of Aeronautics and Astronautics NIA Student Chapter.

During his undergraduate studies, he was part of the College Park Scholars in the Arts program, Ballroom at Maryland competition team and played the Tenor Drums in the Mighty Sound of Maryland Marching Band. In the spring of his junior year, Alex traveled to Sydney, Australia where he attended one semester at the University of Sydney. Alex's true interest in aerospace research came from being a member of Sigma Gamma Tau and doing undergraduate research with Dr. Sean Humbert in bio-inspired flight control of MAVs.

During his graduate studies, Alex worked with Dr. James E. Hubbard. His current work was innovative and involved using small synthetic jet arrays to control and modify the boundary layer on wings. In this role he worked in collaboration with the Physics and Controls Branch at NASA Langley. In short, he was part of a forward-thinking team exploring ways to make the next generation of aerospace vehicles more efficient and safer.

Alex was not only talented professionally but he also had several hobbies. Alex was an avid musician, a sailing enthusiast, and enjoyed spending time with his family, co-workers, and the many friends he made while traveling around the world. He was a young man who was respected by his colleagues, and was loved by all who knew him. In his brief life, he cherished family, friends, and education. Alex never lived a day without striving to make tomorrow better and it always came with a smile. Alex was a wonderful son, a cherished "big brother," a loving grandson, and a best friend to many people. Alex will be missed for a lifetime.





Message from

James E. Hubbard, Jr.

Langley Distinguished Professor | Director Morpheus Laboratory

This is my tribute to Alex Brown, a very special student, a promising young scholar, a gentleman, a confidant, and a personal inspiration for me and the many others whose lives he touched.

Alex Brown was my student and Morpheus Lab GEN II Team Leader.

Alex was one who realized that while we make our living by what we get, we make our lives by what we give.

He was optimistic and upbeat, and even when under intense pressure; he radiated the positive feelings that created resonance among his peers.

His self-management had a trickledown effect which showed me that by staying in control of feelings and impulses, I could craft an environment of trust, comfort and fairness among my research team.

Alex Brown knew that for us, coming together was just a beginning, staying together was progress, and working together created our success. He inspired us through courage and hope and encouraged us each day to continue our quest.

With a thank you, a smile, and warm praise, Alex let us know how much we meant to him.

Watching him grow and progress reminded me that we were growing in a meaningful direction and that helped me to rise above each day's challenges. On difficult days he taught me to cultivate optimism by committing to the cause, to the plan and to our Teams values.

Alex Brown was a student leader who leaves behind him in others the conviction and the will to carry on the dream. He was indeed a superior leader in his own right.



Lao-Tzu best described Alex's leadership ability when he said:

“Superior leaders get things done with very little motion. They impart instruction not through many words, but through a few deeds. They keep informed about everything but interfere hardly at all. They are catalysts, and though things would not get done as well if they were not there, when they succeed they take no credit. And, because they take no credit, credit never leaves them.”

Alex Brown was my friend and my life is much better having shared the journey with him.



FAMILY AND CHILDHOOD



FAMILY AND CHILDHOOD

GROWING UP WITH ALEX...

by Randy and Pat Brown



Alex was our first born child. Both of us had careers so we hired a live in nanny on a trial basis. She barely spoke 10 words of English so

from the very beginning Alex's brain was challenged by hearing Spanish from his nanny and English from everyone else.

When he was 18 months old his mom decided her career could wait and she stayed home with Alex. She was a great mom and found countless ways to enrich Alex's life and to instill in him a love of learning and an insatiable curiosity about everything around him. As a veterinarian with an advanced degree she was able to guide him in the ways of science from an early age. She was also pretty good on the piano and we both made every effort to expose Alex to music even while in the womb. He was an adorable child and I must admit we doted on our only son.

About 19 months later Alex's brother Eric was born. As any parent knows this was a big deal because he now had to share the exclusive attention he had been getting from us with someone else. Those of you who knew Alex may not be surprised that he handled the

transition in style and immediately bonded with Eric and treated him with love and respect from the very beginning.

When Alex was a little over 3 ½ years old it was time for his mom to return to work. Our dilemma was we weren't comfortable with the idea of day care or a nanny for our children after we had spent so much quality time with them, and we didn't live near any relatives. The solution was for me (dad) to take a turn staying home with them. I was an Air Traffic Controller and thought it would be a lot easier staying home with my kids than the pressure cooker world of controlling airplanes.

Boy was I wrong! It was like jumping from the frying pan into the fire (I can hear all the moms out there chuckling). This was the summer of 1990 and there weren't many stay-at-home dads around. My biggest fear was that I would let my guard down for a moment and something would happen to one of them. From day one I noticed that Alex was big and strong at 3 ½ compared to his 6 month old little brother and I decided to sit him down and make a big deal about Eric's relative fragility and the big important responsibility Alex had to help his dad take care of the baby. Alex took to the role and proved to be very responsible and creative in helping "manage" his little brother. This pattern endured for their entire childhood and may be at least a small part of why he grew into the type of compassionate, caring person who was comfortable in leadership roles.

Many who knew Alex are aware that he was also comfortable speaking in front of large groups of people. I truly believe he learned this in Kindergarten at a small school run by a somewhat eccentric older woman who insisted that all students meet once a day in the auditorium for an assembly. The kindergarten children were challenged to earn badges by memorizing short poems and then stand in front of the entire school at the assembly (kindergarten through 8th grade) to recite them. At first Alex was reluctant (I know I would have been) but he really wanted one of those badges so he practiced and practiced his 4 line poem until he mastered it. The big day came and he marched right up to the podium and belted out his poem and found that nobody laughed at him and that it was a pleasant experience. He was so proud of that badge! He was hooked and the badge collection grew as did his self confidence and speaking ability.



Alex with his father, Randy, and younger brother, Eric.

In spite of his increased confidence and ability to speak in front of crowds Alex had misgivings about returning to school in the First Grade. Alex loved animals of all kinds so we made a deal with him

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that if he went to school without crying for the entire first week plus the first day of the following week, we would get a dog as a family pet.

One thing we learned early on about Alex was that when he wanted something special and was given the opportunity to earn it, he excelled. We soon had a Chocolate Labrador Retriever named Hershey.

The next big transition in his life came after completing Kindergarten through 3rd Grade in that small school. Our budget was tight and we decided to move him to the public schools partly because we noticed some of his peers from the public school were as advanced in math as he was if not more so. What were we paying for?

He was such a sweet, open and honest kid that we worried a little about things like bullying and the rougher world of public schools. Our solution was to tap into his and his brother's enthusiasm for the Teenage Mutant Ninja Turtle craze on TV at the time and enrolled them both in karate lessons. Long story short after a summer of karate lessons it was the first day of school and Alex found himself at the public school bus stop. Sure enough there was a bigger, portly kid pushing and shoving and generally having his way with the younger kids. Much to our amazement when it was Alex's turn to suffer some abuse he stood right up to the kid and in a loud voice said, "I'm not afraid of you." Apparently that was all it took and the kid never bothered him again.

During this time Alex wanted to learn to play a musical instrument. Since we had a piano we gave him another challenge: take two years of piano lessons and then pick any instrument and get our full support. So he and his brother took piano lessons and then Alex chose the saxophone and Eric chose the trumpet. Both kids were pretty good by the time they got to high school. Interestingly they both switched eventually to drums and guitars.

Alex benefitted from our unusual family arrangement in many ways but in particular he was fortunate to have a mother who in spite of having the job of supporting the family through her career was always eager to be involved in Alex's activities. She volunteered as a Scout leader and was there every step of the way as Alex earned the rank of Eagle Scout. She also encouraged and supported his interest in Destination Imagination, an after school program created to teach kids to work together in teams and use their imaginations to solve problems and think in new and different ways. She did so many things to enrich his life and was a big part of why Alex grew into the special person that he was.

A funny thing about Alex is how he went through a growth spurt in middle school that left him temporarily vulnerable to broken bones. It seemed like he would fall down while skateboarding and break a bone or fall off his snowboard and break a bone, etc., but the strangest one was when he broke a bone arm wrestling a girl in class during school.

Alex enjoyed sports of all kinds and played basketball, lacrosse, soccer, baseball, tennis and even decided to play on the high school golf team. He was also very involved in music and played in the Jazz Band, Concert Band and Marching Band.

One thing unusual about him was that he knew from age 3 that he wanted to be an astronaut. I think Alex still had that in the back of his mind motivating him as he pursued his education in Aerospace Engineering. He really liked the idea of working in a NASA lab and using one of their wind tunnels for his research.

But the best thing about Alex to us was how he was truly a genuine individual who looked past the exterior things in people with an eye to uncovering who they truly were on the inside. He cared about people and tried to treat them with respect and dignity. His positive outlook on life and boundless energy made him a joy to be around. We were fortunate to have him in our lives and will miss him dearly.



Alex with his mother, Pat, and younger brother, Eric.



FAMILY AND CHILDHOOD

ALEX A MAGICAL NEPHEW...

by Janeen Rastall (Aunt)

When I think of Alex, I think of magic. Magic was the way he smiled, and how that smile made you feel. Looking through Alex's eyes, the world was magic. It was all a trick, something he had learned as a child.

What he liked about magic was that he could learn a sleight of hand, an order of actions, practice and then perform. The audience never knew all the work he had done, they only saw the Abracadabra. He learned magic from my father. My Dad loved performing magic tricks and even more he loved teaching them to his grandchildren. When Alex would learn a card trick from my Dad, he would concentrate so closely, watching each step, and processing it. Then he would practice and practice. When he got it, he would flash that irrepressible grin.



Alex Brown performing one of his magic tricks.

That smile, all his own, would melt your heart. You couldn't feel tired, annoyed or frustrated when he beamed that smile your way. It was a good thing that he had that smile. It rescued him when his sense of adventure would get the better of him. He was the Pied Piper of his cousins. He led them on many indoor and outside exploits. Once when they were hungry, he talked them in to raiding the dog biscuits kept in the kitchen cupboard. You can imagine that big grin as they chomped down on the green and brown MilkBones.

He liked making fun from simple things. Plastic garbage bags became a slip and slide, and an old dryer drum became an elegant and highly efficient fire pit. Nothing was more magic than Baloo, the blue wooden canoe that he made by hand to explore the river and marshes.



Alex carrying Baloo to put it the Water for the First Time.

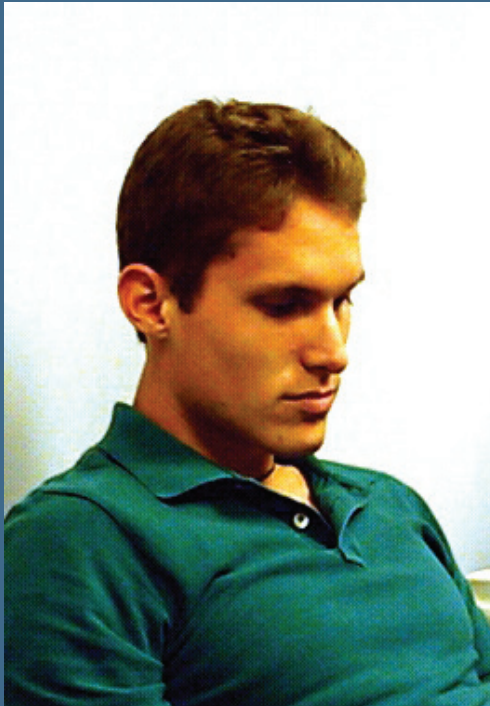
Music was Alex's second language. When he danced, played his drums, or sang and strummed the guitar he disappeared into the song and the sound. It was another magic trick he played for us.

He had a fast and curious mind like his mother. When he was barely walking, Alex would toddle over to a newspaper and with delight point out all the O's and A's and E's.

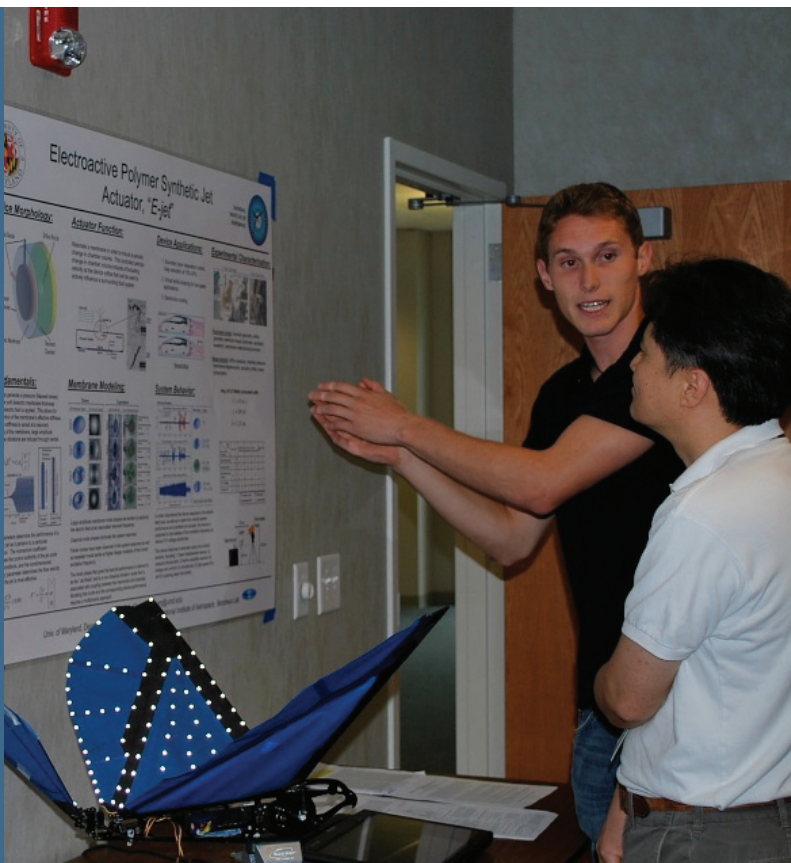
He found magic in the sky, and the wind and the water. He would fly kites for hours in back of his house or on trips to the beach. In my last conversation with Alex, we were trading stories about the way eagles fish: his eagles soaring over the river, mine over Lake Superior. We were sharing the joy of watching them glide, flap, glide low over the water.

In his research, Alex was asking us to close our eyes and imagine flight, then dream it differently. He was still doing that trick, concentrating, studying and practicing, doing all the hard work, leaving us with the magic.

That is what Alex did for us. He smiled and led us by the hand, to see the world as it could be: a world filled with magic.



ALEX AT WORK



ALEX THE DREAMER

by Dr. James E. Hubbard Jr.

My journey with Alex began two years ago when the bright eyed, bushy tailed graduate student walked into my office at the University of Maryland and deluged me with his ideas on how to eliminate the flight control surfaces on aircraft using closely packed arrays of synthetic jets. It was a day of many student interviews for me and by the time Alex showed up I was tired, weary and looking forward to relaxing back at my hotel. But a strange thing happened that day, in very short order I found myself asking Alex questions and having him draw sketches and write down equations. Somehow, he had managed to get me interested in and fascinated with, of all things, arrays of synthetic jets! After that day I was never really sure whether I had hired Alex to support my team in Hampton Virginia or he had recruited me to his passion and cause. In any event he accepted a research assistantship from me and set up shop in the Morpheus Lab at the National Institute of Aerospace (NIA) in short order. He quickly won the respect and acceptance of the elite team of senior graduate students and post docs that made up the Morpheus Lab “Wolf Pack”.

Some six months after his arrival I was attending a meeting of the NIA Technical Advisory Committee (TAC); which consisted of senior faculty from some 8 universities assembled to advise and review the graduate education and research programs. After some discussion they asked if they could interview one of my graduate students. While I was a bit reticent about putting a student in front of such a distinguished group for interrogation, I agreed and went searching for one of my most senior students. Needless to say there were none to be found in the building and only Alex was

there at his desk studying. Seeing my anxiety he offered to address the group. When I expressed my concerns about putting a new student in such a situation he simply said, “Don’t worry Dr. Hubbard I’ve got it.” Well, the interrogation lasted for more than an hour and resembled a Phd qualifying examination. Alex seemed to relish presenting and discussing his ideas on active flow control. The committee marveled at his enthusiasm and knowledge given the short time he’d been at NIA. In fact they absolutely loved talking with him and vice versa. It was then that I knew Morpheus Lab had been blessed with a special individual.

Over the course of his first year Alex began to assume new responsibilities as most of the older students in the lab



graduated and moved on. He became quite adept at flying many of our remote control aircraft and eventually took on the role of lab manager. He helped me interview and hire a second round of graduate students which he called Generation II. He supervised summer interns, organized and led our community outreach efforts and oriented and nurtured the development of the Generation II Wolf Pack. They grew to love Alex and relied on his guidance and judgment seeking advice on course selection, research focus and outside activities. Needless to say he made my job not only easier, but a pleasure.

One year into his work here I decided to prepare a proposal to the National Science Foundation to fund some of the ideas Alex had on arrays of synthetic jets for flight control. I teamed with Dr. Alison Flatau, the resident expert in such technology in the Aerospace Department. As fate would have it my other duties at NIA quickly multiplied and I found myself coming up on the proposal deadline with no time to complete the proposal. Once again Alex offered his help. Both Dr. Flatau and I had no intent of leaving such a proposal in the hands of a graduate researcher as the NSF review process is one of the most rigorous and is peer reviewed by experts from across the country. Alex took this as an opportunity to prove that he could meet the challenge. With our guidance he wrote the proposal, working 10-12 hours a day until it was finished to our satisfaction.

That proposal was funded to the tune of almost three quarter of a million dollars and paid not only for Alex's complete education thru the Phd, but included faculty salaries and an additional student. Alex Brown was finishing up his first year in the Morpheus lab with style.

Alex's second year at NIA was a whirlwind of activity. He finished his Masters degree and began preparing to take his Phd qualifying exam. His research had made him well versed in the in the low Reynolds number flows associated with our RC aircraft. He decided to request an exam in the area of aerodynamics assuming it would encompass this flow regime. As it would turn out his exam committee decide to push and test his abilities by examining him in high speed hypersonic flows! It was the first time that I had seen him nervous about an upcoming challenge. I must admit that I too was nervous, in fact I was a basket case and tried hard to lobby the committee chairman

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to change the focus, but for naught. I remember the exam well, I was so nervous that the committee chair insisted that if I didn't get settled she would have me removed.

Alex gave me a nod and a smile and proceeded to take on the challenge at hand. The committee was very pleased with the result and each individual member complimented his performance afterward. Needless to say I didn't do as well and immediately proceeded to take Alex out for a celebration beer or two....well three!

He went on later in the year to win the prestigious NIA Martin L. Drews Scholarship. An award established by the Drews Family to honor a son tragically lost to them. The award was established to recognize outstanding research in the area of space systems. Alex's work was in Aeronautics and had absolutely nothing that was space related. Not believing much in rules, I strongly encouraged him to apply and told him that I would work with him on the application letter. As always he simply said, "I've got it Dr. Hubbard", and he prepared and submitted the documents without my ever being involved. Later on I asked Mr. Drews about the application and he told me that after reading only the first two sentences of Alex's letter, he awarded the scholarship to Alex Brown. He said that those sentences were written exactly the way his son would have written them and then he wept profusely. Alex Brown was finishing up his second year at NIA with style and honor.

Alex was quite eclectic in his other activities as well. I decided to take up the harmonica and learn to play the blues; Alex offered to give me lessons. My wife and I decided to take up ballroom dancing on Friday's in an effort to spend some quality time together each

week; Alex had competed in ballroom dance and offered to help me perfect my steps. I have a profound love of dark beers and have traveled the world sampling the best. Alex introduced me to an imported Imperial Stout that has become my favorite. I've always dreamed of owning an off road Jeep Wrangler and finally was able to purchase a Rubicon edition. Shortly thereafter Alex purchased a special black ops edition of the Jeep Wrangler and had many wonderful off road adventures.



By now I'm sure you get my drift, Alex Brown was becoming "the most interesting man in the world". We formed a mutual admiration society and lived our research lives to the fullest. I now realize that I grew as much as he did during the last two years, in large part because of his presence in my life. I will miss him dearly and because of Alex my life will never be the same. I can never repay him now for all that he did for me and my team, but for the rest of my life....I will try

ALEX AS A MENTEE

by Dr. Alison Flatau

While working with Alex I discovered so many special things about him. Yes, he was a great student, but that isn't necessarily what made him so special. When Alex graduated from our undergraduate program and moved to Virginia and the NIA to join Prof. Hubbard's graduate research team, I had the good fortune of becoming

his mentor. It is a common practice for students to ask faculty to serve on their graduate research committee, and to meet with committee members on occasion throughout the course of their studies. Although I was a committee member and not Alex's advisor, Alex took the initiative to benefit so much more from our connection by building a mentor/mentee relationship with me. This effort on his part is wonderfully telling as to just how special an individual Alex was. As a mentor and a professor, the ability to connect with students is so important. The primary thread of the relationship of a mentor/mentee is the ability to communicate and understand each other and for the mentor to be able to pass on information that is useful for their growth and development. Sometimes that can be difficult; with Alex, it was delightfully easy. I'd like to elaborate on some of our interactions to convey this, and in so doing, to convey things that made Alex special, such as his enthusiasm for learning and for sharing both knowledge and creative ideas with others.

The topic Alex selected for his graduate research involved modeling and experiments to understand the dynamic coupling phenomena of synthetic jet actuator interactions with flow fields. Prof. Hubbard and I had just secured our first funding in this area from the NSF, and were anxious not only for the research to be successful, but for the research process to be successful. We had a vision for engaging two graduate



students, one at College Park and one at the NIA, who embraced the full potential for a collaboration that took advantage of what the infrastructure at our two locations could offer. With Alex Brown working with Prof. Hubbard at the NIA, and Zohaib Hasnain working with me in College Park, and we had the right team in place.

In the pre-Skype era, Alex, Dr. Ugrina and Prof. Hubbard had weekly teleconference meetings with Zohaib, me and my team of three undergrads, Sid, Morgane and Eric, on our active flow control research activities. Alex was always on top of it, and even if he'd had exams all week and Dr. Ugrina and Prof. Hubbard were out of the office, Alex would join in from the NIA teleconferencing center. This is one of many sides of Alex that I enjoyed. Even as a first year graduate student, Alex understood the value of the meetings was more than just a "show and tell" activity in which he was to summarize what he had done that week. He really enjoyed the discussions and appreciated that there was much to learn through participating in the creative process of idea exchange. Alex readily engaged in these weekly discussions, embracing the role of mentor to the undergraduates and peer to Zohaib. Alex and Zohaib successfully identified distinct and complementary aspects of the project, with Alex making it to campus as needed for actuator characterization tests and meetings with industry representative, etc. Through these interactions, Alex got to know the undergrads so well that he helped secure a summer position for Eric with Prof. Hubbard at the NIA, an exception to standard practice, as there are no undergrads at the NIA.

Skype made our weekly meetings more convenient, but fast-forward to spring 2011 when class scheduling conflicts

due to an expanded undergraduate team necessitated a separate meeting for the undergrads at a time that Prof. Hubbard couldn't make. We simply arranged for Zohaib and Alex to have a separate weekly research Skype meetings with Prof. Hubbard and me. Those who know Alex won't be at all surprised to learn that Alex also Skyped in to our weekly undergrad meetings. This was just great! It would have been so easy for a student at the NIA not to take the time for weekly UMCP undergrad meetings. But that wasn't Alex. He helped nurture the relationship between the NIA and College Park (the "Morpheus Lab" and "Morpheus north"). Alex was a vital team member, just at a remote location. When Alex and Morpheus team members came up for their weekend exhibit at the Smithsonian Spark Lab this past April, Alex stopped by my office with his new TSI sixjet atomizer. He'd just gotten it that month, set it up and tested it at the NIA. He showed my students how to set it up so the undergrads could use it for wind tunnel flow visualization studies. Thinking of these interactions makes me smile, as that's what Alex would be doing.

Another aspect of my mentoring relationship with Alex dealt with professional development in the area of proposal writing. Prof. Hubbard and Alex had come up with the idea of having Alex take the lead on preparing a proposal for the NSF based on the results of our initial studies. PhD candidates often write and present research proposals to their graduate committees, so this seemed reasonable enough; however to prepare a submission for the NSF, well, I thought, "rather ambitious," I happily offered my services as Alex's mentor. I provided the Word document of the NSF proposal that led to the existing funding and some generic suggestions about pull out XX and put in YY. Alex



ran with it! I gladly confess that I not only underestimated what he could do but also how fast it would get done. The first draft came back with what Alex knew; it resembled a well-written research paper. Prof. Hubbard assured me Alex was up for the challenge, so I in turn challenged Alex in the next iteration to focus more on what needed to be learned than a review of what was known. His ability to be open to ideas and to absorb direction for improvement was astonishing. For the next iteration, we focused on moving to details about how the research dollars would actually be spent; e.g. what were year one questions and research tasks. On all of these iterations, I had some concern that I might inadvertently discourage Alex with too much feedback, but he recognized it for what it was, encouragement for improving the document and he thrived on the feedback. By iteration four, we were starting to address organizational and structural aspects of the proposal, iteration five, finishing up revisions to details on experiments, and if I'm not mistaken, Prof. Hubbard, Alex and I submitted iteration seven. And, YES! It was funded.

I was most fortunate to have had the opportunity to get to know Alex as a mentee, and I am deeply saddened that Alex left us at such a young age. The way Alex was so open and easy to work with and his ability to absorb the information I passed along, in many ways also described him as a person:

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open, personable, with an enthusiasm for sharing knowledge and ideas; attributes for us all to aspire to.

Alex had so much to give. I learned so much from him. For that reason, he was a mentor to me as well as my mentee.

ALEX AS A MENTOR

by Eric Avadikian

Alexander. Nicholas. Brown. On October 24, 1986, three simple pronouns were chosen to represent an individual who would later become my mentor and friend. Initially arbitrary, this name came to be defined by a charismatic, youthful individual who held nothing back in his journey through life and influenced people along his path. In the summer of 2010, I was invited down to the Morpheus Lab to work on ornithopter (flapping wing) research under the direction of Alex. What initially began as an internship transformed into a mentorship and friendship.



Alex and I at the Smithsonian showcasing the Ornithopters to the Children

As an aerospace engineering student at the University of Maryland, I had many internship opportunities available to me. After working with Alex and the Morpheus Lab through a prior UMD research position, I had a familiarity with Alex's technical capabilities as well as his innovative approach to solving problems. I have always been

a hands-on person, but Alex and the group had qualities that I wished to instill in myself. Therefore, after contacting Alex and Dr. James E. Hubbard (and with Alex's recommendation), I was invited to work with the UMD Morpheus Lab at the National Institute of Aerospace. Alex's problem solving abilities became even more apparent to me after just a few days of working and debating through technical challenges. It also became apparent that Alex came from a background similar to myself: hands-on activities, do it yourself - work hard, play harder. By simply interacting with Alex and getting to know his past, I was able to see the potential in myself. He had all of the hands on ability, but he also had the mental stamina; engineers typically excel with one of those traits while lacking the other. So I absorbed his thought process and bantered through engineering challenges as he taught me his thought process. He was truly unique in his skills and experiences; this served to motivate me to higher levels with hands-on ventures, problem solving abilities, relationships, and my overall approach to life.

Alex not only acclimated me to the Morpheus Lab, but he also helped me to feel comfortable as a man who was living many hours from home during that summer. One day after work, at the start of my internship, Alex invited me to meet his group of his friends, which also included two other Morpheus Lab members: Aimy and Lia. It very quickly became apparent that the Morpheus Lab was not simply a research group pursuing individual degrees, but they were also friends - the depth of which they regarded as family. Each graduate research project was not simply tackled by one person; each member of the group (including Alex) volunteered both mental and physical effort to help the other

members through difficult concepts. As one of my first internship challenges, Alex taught me how to CNC machine various materials and worked with me until the quality of my work paralleled excellence.

Looking back, there would have been no other internship experience where I could have learned so much as well as met so many fantastic people. Alex had a wonderful and unique quality of being able to invite someone into his group and instantly make them feel at home. Serving as my guide into the technical challenges of Aerospace Engineering, I was given a glimpse of the possibilities for my own future. Alex understood hard work and goals as well as planning for the future; but more than that, he understood the concepts of love, family, teamwork, friends and the wolf pack (Morpheus Lab team members).

Alex was an inspiration for me due to our similar backgrounds. Alex had a large mechanical aptitude and love for life, which generated an interest in any opportunity that crossed his path. For instance, how many aerospace doctorate candidates do you know that are also a: dancer, motorcyclist, cook, sailboat captain, rifleman, remote control airplane pilot, swimmer, fabricator, etc.? He was truly an inspiration; and his before mentioned skills serve only as a shallow glimpse of the person. Alex had a true gentleman's character. He was known to be the first person to offer either help or friendship to anyone he met. It was no sunrise to me to hear about his heroic actions during the night of the incident. Alex's mere presence that night enabled others on the sailboat to survive; Alex was the true definition of a hero. After hearing of Alex's actions that night I swelled with pride to know that I have been influenced by such a strong and driven individual.



Alex Brown was an integral part of helping me to not only realize the potential within myself, but also helped me to see and motivate the potential in others. It has been an incredibly positive experience knowing him; he was a great mentor and an even better friend. His approach to both life and people are worthy to be admired by any person, because he truly lived life to the fullest and made sure to include every person he could into his adventures. Words cannot express my gratefulness for being given the chance to know Alex; and neither will his memory will be lost among the people he has affected. His ideas and sense of humor will be his legacy and the people affected by Alex will go forward to affect others with such things as his work love, sense of family, work ethic, and problem solving methods. Therefore I am relieved to think that Alex will live on starting with the people that he knew, and going on through the people that they will meet in the future. Alex was a great man, colleague, mentor and friend; he will be missed, but not forgotten.

My hope is that this account of my mentorship-turned-friendship with Alex will inspire anyone to adopt his approach to life; enjoy every opportunity you are offered (pursue the ones you are not offered), and work to achieve your full potential while motivating others to do the same. Alex was a great inspiration to me and his life should serve as a guide to others. I believe that Alex would agree with the words I have written, and I can imagine that his reaction to this message would be in typical Alex Brown fashion: "solid".

ALEX AS A STUDENT LEADER

by Prof. Robert Lindberg and Prof. Bernard Grossman

The extended family here at the National Institute of Aerospace is deeply saddened by the loss of Alex Brown, and his friend and our colleague, Tyler Lorenzi. In the nearly three years that Alex was a member of our family, we had watched him grow as a student, as a young professional, and as an emerging leader.



Graduate study at NIA can be a challenging experience. Unlike College Park, NIA is a small tight-knit community. Only 15 or so faculty, and less than 60 full-time students. No football games, no student union, no dormitories, no Cornerstone Grill. The upside includes the camaraderie of grad students from seven or eight other universities and the chance to work in the research labs and wind tunnels at NASA.

Alex embraced the experience. Several years ago, our NIA grad students had formed their own chapter of the American Institute of Aeronautics and Astronautics. Alex was vice chairman and worked closely with the chair, his good friend Charlie Cimet of NC State. The students have come to use the student chapter as a way to explore ideas beyond their own focused graduate research. They organize presentations each month, alternating between student presentations and invited presentations. Alex worked on identifying and inviting external speakers. Over the last year, the chapter

had heard talks on hot research topics at NASA including the hazards of volcanic ash to aviation, innovative ideas for transforming the air traffic management system, and new NASA work on subscale remotely piloted vehicles. This last talk connected directly with Alex's research in Prof. Hubbard's Morpheus Laboratory.

Organizing chapter events takes money. Alex took the challenge head-on – first designing a new t-shirt, and then managing the sales. Smart move – since the design featured both AIAA and NIA, his market extended well beyond the student members. Today you can catch NIA professors and staff, and even NASA scientists and engineers wearing Alex's t-shirt.

Alex also had plans for a new tradition – an AIAA picnic each August for new students. And so he lobbied for picnic tables. And he saw that as a way for the students to give back to the NIA family – the picnic tables would be a gathering place for any of us to relax and enjoy conversation. (Alex and Tyler's friends now plan to design and construct the new NIA picnic area as a memorial.)

Alex sought more than the typical student experience. He had recently joined an informal group of young professionals and graduate students who call themselves the Langley Emerging Professionals Committee. This inspiring (and inspired) group has taken on the challenge to spur innovation at NASA Langley Research Center. They seek out NASA's leaders and are not timid in pointing out changes that can make the center more successful. Working with the NASA leaders, Alex and his young colleagues have started to change the way that NASA thinks about innovation and talks about innovation. Changing NASA – not what you expect from a typical student. Alex was anything but a typical student. Alex was an emerging leader.

ALEX AT WORK

GIVING BACK WAS ALEX'S PASSION

by Aimy Wissa and
Cornelia Altenbuchner

Some people feel that outreach or giving back to the community is their duty or that they owe it to the community to help out, but for Alex giving back was simply his passion.

In April 2011, the Morpheus lab team was asked to go showcase our ornithopters, flapping wing unmanned air vehicles (UAV), at the Smithsonian American History Museum Spark! Lab in Washington, D.C. The exhibition was part of the robotics week. When we first got the invitation, we did not know whether we would be showcasing our work to children or adults. We did not know whether we will be in a small room or a big auditorium. We were all worried about the logistics of everything but not Alex, he was excited. He kept assuring us that everything will be okay and indeed this outreach experience was nothing like we have ever attended before.



When we arrived at the museum and after setting up our station, the doors were open to the public. The room was flooded by people of all ages. Most of the people in the room were children between the ages of 4 to 14 and they were accompanied by their parents. However, every now and then an adult would walk by our exhibition and that's when we realized Alex's unique strength.



Alex had the unique ability to convey a message very clearly to anyone regardless of their age. He was very comfortable talking to little kids and simplifying very complicated concepts for them so they can understand them while remaining excited. He could also easily impress any adult regardless of their age or area of expertise. Some of the people that stopped by the exhibition were professors, others were entrepreneurs and others were house wives and with all of them Alex was able to not only explain our work but also get them very excited about it. Alex's true strength was that he could engage anyone in a conversation. He knew the exact amount of information to give to each person depending on their age, interest level and background. He spoke with the professor about the theory behind our ornithopters, he talked with the entrepreneur about their potential to infiltrate the civil market, and with the kids, he was able to get them excited about flight and remote controlled airplanes. The beauty is that anyone who came to speak with Alex left with either a smile on their face or an idea that they were very curious about.

For Alex, this exhibition was not a duty he had to fulfill or a work assignment he had to attend, it was like anything he did in his life, it was fun. He was very passionate that day and we could tell that he was really enjoying sharing his passion about flight and air planes with others and what was remarkable

that all the audience left almost as excited as he was. Alex's passion that day was delightfully contagious.





ALEX WITH FRIENDS



ALEX WITH FRIENDS

A UNIQUE CHILDHOOD FRIEND

By: Ben Brown

Chance sometimes gives us something great. Alex Brown and I were close friends, the type of life-long buddies that stand by each other through graduations and weddings, christenings and funerals. Our meeting was pure luck of the draw. Though we lived relatively close to each other, I didn't know Alex until middle school when our school districts merged. In sixth grade, we were scheduled in the same P.E. class. Alphabetical seating put us next to each other – it doesn't get any closer than “Brown, A” and “Brown, B” – and like anyone who met him, I had little choice but to become Alex's friend. Alex held no prejudices, leaving an open door for friendship no matter how you looked or how uncool you were or what you brought to the table. There's no place more vulnerable for a fat kid than gym class in grade school, so Alex's acceptance was a godsend that immediately led to strong friendship.

A positive outlook and a commitment to excellence were not learned traits for Alex. He behaved the same way at 14 that he did at 24. In Scouting, Alex was a natural fit for the highest leadership position in our troop and, one summer, for an entire summer camp of 500 boys. In Destination Imagination, Alex's example taught me how to act like a dynamic, creative, and positive team player even when I didn't feel like one – a skill which propelled us to the state championship. In the band, Alex developed a multi-faceted musical talent, migrating from the saxophone to guitar to drumline and quickly becoming the soul

of that group at our high school.

Most childhood friendships like ours reach an inflection point when college relocates friends to the four corners of the Earth. Our relationship almost worked out the same, but again I think fate intervened. Alex closely considered offers from both Virginia Tech and the University of Maryland (though the excellence of the aerospace department at Maryland tipped the scales on that choice!). I chose the University over St. Mary's College of Maryland on a coin toss, basically.



While we remained good friends for our first two years in college, Alex and I naturally developed new social circles – he in College Park Scholars and I in the University Honors program. That said, our interests remained intertwined. When I bought a motorcycle in my sophomore year of college, Alex was not far behind with his first bike (a real jalopy!). And whenever a crisis arose, Alex was always willing to appear. By our junior year, a successful bid in the University Courtyards housing lottery brought us close again. Never ones to skirt adventure, by our second semester we were still roommates – but this time it was while studying abroad at the University of Sydney.

Until this month, I was certain Alex and I were peerless friends. But it's amazing what you don't realize about other people, no matter how close. What has become clear to me is that nearly everyone that took the time to get to know Alex put him in that rarified category of a great friend. After the news came out of Alex's sailing accident, over 200 people from as far away as Australia and England posted special, specific memories to his Facebook wall.

Alex's friends from the Mighty Sound of Maryland drumline arranged a candlelight vigil on May 21; nearly 100 people, from grade school friends to recent colleagues from Alex's work at the National Institute of Aerospace, must have attended on a Saturday night with short notice. A memorial service at NIA, where Alex was conducting his doctoral research, also attracted a crowd.



Just as chance sometimes puts something great in our lives, chance can also sometimes take away something special. We all lost something on Friday the 13th of May. Alex's family lost a part of itself. I lost a great friend, as did many others. The University lost one of its brightest rising stars. The field of aerospace engineering lost a passionate and dedicated thinker. The death of Alex, and his colleague Tyler, is no doubt a tragedy. These losses are substantial in isolation and tragic in combination. But, from what I understand about the events of that night, Alex died not as a victim but as a hero. Alex responded to his mortal challenge with the same selflessness that defined his attitude for as long as I knew him. It is important to remember that in this tragedy eight



lives were saved in part due to the efforts of Alex and others. It's a normal man that can create positive outcomes from positive opportunities. It's a remarkable man that will strive to do the same in the face of death.

I've thought about how to moderate the impact of Alex's death, how to turn a tragic event into positive action. Others have taken the lead on this. NIA has constructed and installed a memorial picnic area on their campus in Hampton, Virginia. The Alex Brown Memorial Scholarship is another remarkable and important step by the University, Dr. James Hubbard, and Alex's network of friends. This scholarship fund enables those of us who knew Alex, or someone like him, to create a token of our appreciation for his positive impact. And in supporting aerospace education and research, hopefully the Scholarship can in some small way allow Alex's passion and potential to live on in others. (If you're willing to contribute, please contact the Aerospace Engineering Department for more information.)

But these actions are perhaps not the most important thing we can do as a result of this tragedy. The best way, I believe, to honor Alex is to celebrate what made him special by adopting some small part of his vibrant personality and positive outlook in our daily lives. Let's all be a little more inviting to those we don't know, more passionate about what's in front of us today, and more positive about what lies ahead.



When Alex's Friends were asked to describe him in one word, they said Alex was ...

DEDICATED TO EXCEL

by Duncan McGillivray

Alexander N. Brown had a knack for acquiring new pastimes; he didn't so much acquire these new hobbies out of pure enjoyment of the subject but took his passion from developing the necessary skills to excel. Every project was driven by challenging himself

intellectually, physically or through craftsmanship. There was not a single hobby he hadn't researched down to a T, partly to satisfy his curiosity but more so as to give him an advantage to become the best that he could be. This dedication is reflected in his skills in research, music, carpentry, slacklining, motorcycling, biking, camping, surfing, skateboarding and most recently photography.



EFFERVESCENT

by Nicole Pothier

Alex's excitement about many aspects in his life was more than just a little contagious; it's difficult to pick one story that depicts this. He and I bonded over old tales of marching band, and the woes of losing talent we once had. Determined to fix this fit of nostalgia, he convinced me to fetch my trumpet from my home nearly three thousand miles away, so we could relive the glory days. His enthusiasm was impossible to ignore, and I quickly found myself just as eager to jam out like the good old days. I picked up my horn for the first time in over a year the other day, and the joy I once had for performing came rushing back in an overwhelming wave of pure happiness. Alex always found time to play, to be happy, and to share his delight with those near him. His child-like animation was something to be cherished, and I am incredibly grateful for his reminder that it is okay to be ridiculously ecstatic about the simplest things in life.



ALEX WITH FRIENDS



ENTHUSIASTIC

by Geoff Slipher

Alex is many things in my mind, but what stands out the most is his trueness and honesty to himself. I have trusted and admired many people over the years, but Alex was different. He made me feel at ease in his presence. At ease, and at the same time ready for action. He was confident, but in a quiet and dignified way. He was passionate, but in a way that still allowed him to be effective. He was fun-loving, but also hard working and inspired. In short, Alex was balanced.

I believe it was Alex's exuberant and intense enthusiasm for life that enabled him to overcome the many challenges and potential pitfalls we face every day, and thereby to achieve his remarkable balance. I sensed it the first time I met Alex. Alex had come down to our lab at NASA to undergo the test that all aspiring members of Morpheus Lab must endure...the dreaded tour. In actuality it is a congenial and friendly event, but one designed with a specific purpose: to assess the fit, or chemistry, of potential new hires. Alex came with another potential new recruit, but it was clear to me almost from the outset that Alex would be the choice. As we walked around our facilities, he kept interrupting, asking pointed questions, and even making suggestions. It wasn't in any way cloying, aggressive or obnoxious, but purely enthusiastic. Before long, the "tour" had become a conversation, and I found myself wondering as we shared lunch which project we could put him on? Which project would he be most interested in and appropriate for? It seemed like he was interested in every single thing. And he was. He really was. It wasn't a show. It was genuine. Alex was genuine. You could sense it from the moment you met him. Maybe it was that which put me at ease. Alex had no agenda but fun. An agenda of fun informed by an undying enthusiasm. He lived that way. I like to think he died that way.

It was his enthusiasm that formed my first impression of Alex. It is his enthusiasm that first comes to mind as I think of him now. It is his enthusiasm that I will take with me. It is Alex's enthusiasm that I hope my own children will one day possess. I am grateful to have known Alexander Nicholas Brown, and to have been able to call him my friend. Alis volat propriis...he flies with his own wings.



DYNAMIC

by Ankit Shah

Alex was the most dynamic friend I have ever had. I have friends from different countries but the dynamism with which Alex worked was just inspiring. He was always ready for anything I asked for and I would like to share two of the many interactions I had with Alex. Last year, while I was shifting my stuff into a new apartment, the people I had called for help did not show up and only two days remained before I had to turn in my keys of the old apartment. So the next evening, I told Alex that I needed his help but Alex had some assignments to complete and an exam to prepare for. Without even thinking for a moment, he replied "Tell me what time and I will be there." I was so happy to hear that and we finally moved my things to the new apartment.

On another occasion, I said to Alex " You know what, we should open a company together." Instantly, he replied that he would be willing to do it and from then on, we frequently brainstormed new busi-ness ideas. My experience with Alex was a lot of happy moments, every day, on small things and his dynamic and positive behavior made him a very special person in my life.



OPTIMISTIC

by a friend

Alex Brown was an optimist, sometimes to a fault. He would always dim the negative, dangerous, risky, boring, difficult, and mundane aspects of any topic, activity, or tale. That which was positive, amusing, risqué, fun, social, and rewarding was magnified and exalted. This quality made talking with him comforting, and being in his presence uplifting. Among our friends, I was always amazed at his positivity despite the prevailing attitude of the group. Bad news according to one of us was transformed into a nonissue by Alex, and a mediocre situation turned epic when he was involved. This optimism never faded and was not situation dependent. Firing you up for a night on the town was given the same positive energy as a discussion about raising a family. This was a way of viewing and living life. And I believe that it was his optimism that congealed our group of friends, brought happiness to people in his path, and inspired me to stay committed to my goals on many occasions.



ALEX WITH FRIENDS

ANGELIC

by Denisse Aranada

As a young child, I would always pray to angels. My mom said that angels are there to protect you and to help you when you need them most. At the time, I always envisioned them as these beautiful, mystical entities that reside in the serenity of clouds. Creators of love and tenderness whose primary role was to observe and interfere only when absolutely necessary.

It wasn't until I got much older that I realized that my perception of angels wasn't entirely accurate. I would notice miracles, random acts of kindness, and heroism that lead to the revelation that angels take human form. That a single act of heroism, kindness, and tenderness to a person in need (whether it be deliberate or accidental) can have the most profound effects. There are points in everyone's life's when you are in need, and those who make a difference, are angels in my eye. Everyone has had an angel, Alex was mine.



Like most of the graduate students working in NASA, we came to fulfill a dream. We came to pursue our passion for aviation, space, and exploration. It has always been my dream to work at NASA, so when the opportunity presented itself, I never hesitated. That is, until I finally got here. The reality of pursuing my passions meant leaving behind everything I know and love. I left behind all my friends, all my family, my life, and everything that I understand and love. Over 1,000 miles away from my warm home in Miami, I found myself submerged in a culture that I did not understand and felt that I didn't fit in.

Then, I met Alex. He sat next to me in what has now become my favorite graduate class. Through this class, I met the most amazing people in the world! Dr. Hubbard and his students are not only remarkable scholars but they are the most tender, caring, loving individuals I have ever met. Everything changed once we all became friends. Alex, with all the love and nurture in his heart, took me in as a close friend instantly. He has an amazing ability of making people feel welcomed, appreciated, and important.

Professionally, Alex's intellectual depth made him a valuable member of the NASA team. He was innovative, inspirational, and very impressive. He was not only capable of attacking really complex problems with ease and poise but he also displayed the kind of humbling leadership that makes others want to follow.

Personally, Alex is the most interesting man in the world! His interest in music, art, sailing, off-road driving, and pretty much anything of substance revived a sense of fun and playfulness in those around him. His passion for traveling, his tolerance for differences, his patience with conflicts, and his overwhelmingly calming character proved to be an amazing concoction of traits that made him a pleasure to be around.

Alex is my angel because in a time in my life where I felt alone and misunderstood, he instantly befriended me. This inclusion into his circle of friends, which was effortless on his end, made such a difference to me. His enthusiasm for life is absolutely captivating and contagious. No matter how bad a day got or how big a problem seemed, Alex had a way of making you smile and walk away from a conversation with a sense of peace and tranquility.

I consider myself lucky to have met such an impressive individual and it saddens me that the memories that I hold dearly of him will not have any new additions. But I am blessed. I am blessed to have met him, I am blessed to consider myself his friend, I am blessed to have had him as a colleague, but most of all, I am blessed to have him as my angel.

Thank you Alex !



TRUSTWORTHY

by Aimy Wissa

Alex was the most trustworthy friend anyone can ask for. From the first time you meet him he gives you this magical feeling of comfort. I have never met anyone like him.

I first met Alex in January 21st 2009, it was my first day in Hampton VA. When he heard, through Dr. Hubbard, that I was in town he immediately invited me over to his place so I can watch the president s inauguration speech. As soon as I entered the apartment he was very welcoming, he introduced me to everyone there and made sure they all knew that I will be here for a long time. Alex was the only reason I made any friends in Virginia, but his impact on my experience was far more critical than just introducing me to people. Alex gave me *courage to jump* because I knew that he will be there to catch me.

Alex was my lab mate and later became my roommate but our relationship was a lot stronger than that - to me Alex was my family when I am away from family. I was not born in this country so growing up I did not do a lot of things that American children did and that was sometime apparent when our group of friends did some activities. Alex always encouraged me to do these things and was always willing to slow down to bring me up to speed. If I list all the things Alex gave me the courage to do, I will need a whole book. So to give you an idea of how Alex gave me faith , I picked one story.



Last year in October, we all decided to go camping, but again I did not know what camping meant or how to prepare for it, so I remember walking into Alex s room and telling him that I am really worried and that



I have no idea how to prepare for this trip or what to do. At this moment Alex did what he did best, he smiled and uttered three magical words, “I got you.” Alex knew that as soon he said these words I immediately believed that everything is going to be okay. So he asked me to bring a piece of paper and pen and he wrote for me a shopping list of the things I need to buy. Like a little kid I went shopping and whenever I could not find something, I gave him a call and asked. He was never upset or frustrated but always patient and tolerant. Anyways to make a long story short, we all packed and went camping. When we got there Alex taught me everything; he taught me how to set up a tent, how to look for wood for the fire , and even how to use a flash light. But during this trip there was one activity that made me realize how much I trust Alex, the *Trust Fall Game*. I never played this game before and I was very reluctant to jump and I did not know whether my friends will be able to catch me, so I decided that I should not do it but Alex knew exactly what to say. He looked into my eyes and with a very kind yet firm voice he said “We will not drop you. I got you.” And as usual as soon as I heard my magic words I jumped.

This jump was one of the many that I took because I knew Alex got me. I took lots of leaps of trust in work, relationships and with friends because I knew Alex was right there to catch me and in his honor, I will continue to jump.

ALEX WITH FRIENDS



LIFE CHANGING

by Charlie Cimet

One of Alex's cliché statements that he frequently used was, "this will change your life!" He would apply it to the ordinarily mundane, such as a new type of tea he had stumbled upon at the supermarket or a movie he had just seen. As his friends, we had become accustomed to his always positive, zealous nature and joked with him by turning around his cliché and using it ourselves. Ironically, because of his cliché saying, we associated ordinary, everyday things with "life-changing," when in reality it was his uniquely positive personality and ability to inspire others which, at the end of the day, served to change our lives.

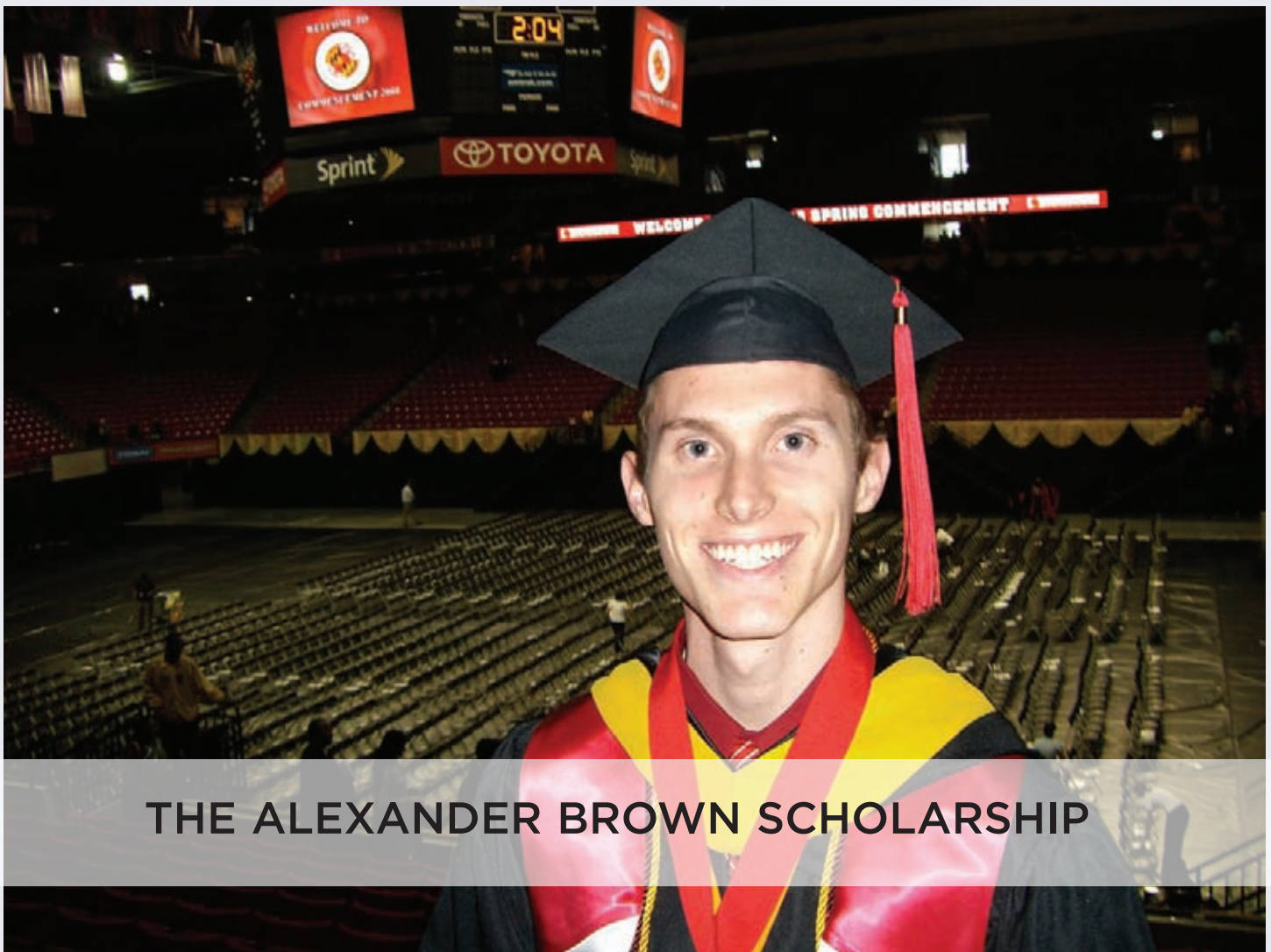
Alex was adventurous and competitive in all aspects of life, which drove many of us to match that vigor and become better ourselves. He was always looking to take on new projects, try new activities, and in general face any challenges. This translated not only to his research but also to his involvement in trying to restore the glory of NASA and revolutionary nature of the aerospace community. It has been widely discussed that the majority of aerospace engineering in the past few decades can be described as an incremental evolutionary progress. Alex was seriously bothered by this as he saw the need for an aeronautics revolution to reshape the industry, but wasn't content to sit back and just hope it would happen; he wanted to be a part of the solution that would be life-changing for our society. But as a graduate student,

he had only a narrow glimpse of how he could help to redefine the field about which he was so passionate, through the lens of his own research and the classes he had taken. Frustration set in, but rather than accept the status quo and remain discouraged, Alex recognized an opportunity in his studies to vocalize his concerns and initiate a change.

Along with several other students, Alex enrolled in a forum class taught by Dr. Hubbard, which sought to explore how NASA was addressing revolutionary technology and provide students a platform to directly interact with the project managers. The class gave us a much-needed opportunity to learn about the agency's current vision and communicate our ideas regarding the future of aerospace. This was the perfect stage for Alex to shine, as he was a natural leader who exemplified patience and sure-minded delivery. Alex led by example; he would often sit silently through much of the class gathering his thoughts, but at a critical point speak up and say something profound and invaluable to the discussion. To use his own words, his contribution was life-changing. Building on the momentum from class, Alex strove to interact with the NASA community through other channels, such as organizing discussion panels and participating on internal review committees. I had the opportunity to work closely with him on this quest; his leadership, though quiet and understated, pushed the rest of us to be as passionate as he was about improving the way NASA does business.

On a more personal level, Alex changed my life. His sense of adventure pushed me to step outside of my comfort zones on a regular basis and achieve my dreams. Because of him, I've learned how to slackline, rediscovered an enjoyment for music, and found that a little hard work and perseverance can go a long way toward realizing my childhood fantasy of owning a sailboat. Maybe Alex really believed that every "life-changing" discovery of his was in fact life-changing, and felt an obligation as our friend to share it with us so that we could enjoy life as much as he did. I like to think that "life-changing" exemplifies Alex's approach to life; he welcomed every opportunity to experience the world around him and found pleasure and excitement in everything. For him, that new tea did change his life, because it bettered his day, and thus his life, every time he drank it. It is this enthusiasm, spark, and zeal for living that made Alex a special human being. Alex himself was life-changing, for his friends, his family, and everyone he touched in his short time on Earth.





THE ALEXANDER BROWN SCHOLARSHIP

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Help Remember and Honor Alex's Passion for Education and Flight

To honor Alexander Brown's name and to remember his passion for education, flight and most of all giving back to the community, The Department of Aerospace Engineering at the University of Maryland has established "The Alexander Brown Scholarship." Your contribution to the scholarship fund will ensure the continuity of the scholarship and help the Aerospace community at UMD to remember and honor Alex.

For information on how to donate, please visit:

<http://www.aero.umd.edu/about/the-alex-brown-scholarship.html>



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**“That is what Alex did for us.
He smiled and led us by the hand,
to see the world as it could be:
a world filled with magic.”**

Janeen Rastall

