Curriculum Vitae

Citizenship: US
Month of Birth: November 1965
Present Rank: Full Professor and Director
Marital Status: Married
Children: Amalia (26), Cassandra (29)

Home Address:
823 Missouri Street
Lawrence, Kansas 66044 USA
+001 (785) 760-4614
adaptivebarrett@gmail.com

EDUCATION

University of Kansas	Ph.D. with Honors	Aerospace Engineering	May 1993
University of Maryland	Master of Science	Aerospace Engineering	May 1990
University of Kansas	B.S. with Distinction	Aerospace Engineering	May 1988

EMPLOYMENT HISTORY

PROFESSIONAL EXPERIENCE:

University of Kansas	Director, Adaptive Aerostructures Laboratory	8/05 – present
University of Kansas	Director, Aerospace Design Laboratory	8/05 – present
University of Kansas	Full Professor	8/15 – present
American Association of University Professors	President, KU Chapter	5/15 – 12/17
American Association of University Professors	President, Kansas Conference	5/13 – 5/15
American Association of University Professors	Vice President, Kansas Conference	5/11 – 5/13
University of Kansas	Associate Professor	8/05 – 8/15
Technische Universiteit Delft, Holland	Visiting Professor	8/03 – 8/04
Auburn University, AL	Alumni Associate Professor	9/99 – 5/05
Auburn University, AL	Associate Professor	9/98 – 9/99
Auburn University, AL	Assistant Professor	12/93 - 9/98
US Air Force, Eglin AFB, FL	USAF Faculty Fellow	6/95 - 9/95
Auburn University, AL	Visiting Assistant Professor	9/93 - 11/93
Barrett Aero. Technologies	President and O.E.O.	6/93 - present
University of Kansas	Ph.D. Cand. & Space Grant Fellow	5/90 - 5/93
University of Maryland	US Army Rotorcraft Fellow	9/88 - 5/90
Skytrader Corporation, MO	Flight Test Engineer	5/86 - 8/88
Trans-World Airlines, MCI, KCMO	MRO Intern	5/84 - 5/86

Contents page

Teaching Load

Courses Taught, Average hrs/9MoAY since 2006	17
Courses Taught, Average No./9MoAY since 1994	5

Listed Among Stanford University's Top 2% Most Independently Cited/Influential Technologists
https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/4

Awards and Honors

International Aerospace Design Awards Supported and Advised	51
International Aerospace Designs Award Winning Students Supported and Advised	224
Global rank in the world among all aerospace design instructors by AIAA award count	1
International Awards for Mentoring Graduate Research	2
International Awards for Mentoring Graduate Scholarship	3
International Awards for Mentoring Undergraduate Research	1
International Awards for Mentoring Undergraduate Scholarship	21
Domestic Awards for Mentoring Student Research	6
Department/School/College-Level Awards for Mentoring Student Research	3
School-Level Awards for Advising	1

Professional Works

Total Professional Works	403

Major Publications

Books and Book Chapters	8
Refereed Journal Articles (excluding journals of the USPTO & EPO)	60
Peer-Reviewed Proceedings	90
Issued Patents	18

Other Publications and Works

Unclassified Technical Reports & Edited Volumes	66
Invited and Keynote Lectures	84
Short Courses	18
Open Lectures	184
Technical Exhibitions and Airshows	16
Citations as of 11/30/22	2928
h-index as of 11/30/22	31
i10-index as of 11/30/22	84

Graduate Advising Record

Committee Chair of Graduated Students & Major Technical Advisor: Doctoral	5
Committee Chair of Graduated Students & Major Technical Advisor: Masters	22

Funding Record

Funded Proposals (number)	38
Funded Proposals (total amount)	$18M

Honors and Awards for Research

International Research-Related Awards	1
Outstanding Paper Awards and Certificates of Merit	4

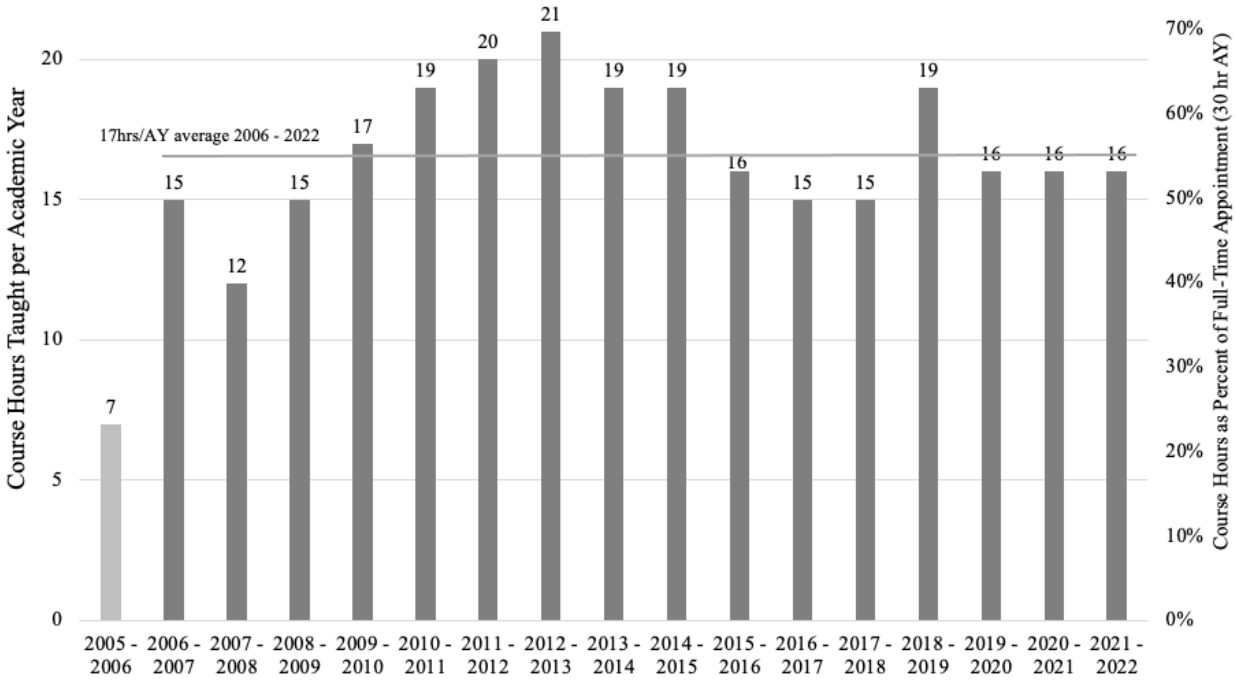
Journal Editorships and Committee Memberships

Journal Editorships and Associate Editorships	3
Technical and Standing Committee Memberships	12

1. DETAILED KU TEACHING RECORD

1.1 COURSES TAUGHT

* = assigned course as only Aircraft Design Instructor at KU
‡ = necessary graduate class as only Adaptive Structures and Helicopters Instructor at KU



Teaching Load 2005 - 2022

Course Number & Title	Sem/Year	Hrs	# Enrolled
2021 – 2022 Academic year:			
AE 522 Aerospace Systems Design II	Sp/2022	4hrs	18*
AE 592 Special Problems	Sp/2022	3hrs	3
AE 722 Aerospace Design Lab II	Sp/2022	4hrs	13*
AE 790 Special Problems	Sp/2022	3hr	2
AE 521 Aerospace Systems Design I	Fa/2021	4hrs	32*
AE 721 Aerospace Design Lab I	Fa/2021	4hrs	8*
Total number of courses taught 2021 – 2022 Academic Year, classes ≥ 5 students:		***4***	
Total course hours taught 2021 – 2022 Academic Year, classes ≥ 5 students:		***16***	
2020 – 2021 Academic year:			
AE 522 Aerospace Systems Design II	Sp/2021	4hrs	22*
AE 592 Special Problems	Sp/2021	3hrs	1
AE 722 Aerospace Design Lab II	Sp/2021	4hrs	5*
AE 521 Aerospace Systems Design I	Fa/2020	4hrs	32*
AE 592 Special Problems	FA/2020	3hrs	1
AE 721 Aerospace Design Lab I	Fa/2020	4hrs	13*
Total number of courses taught 2020 – 2021 Academic Year, classes ≥ 5 students:		***4***	
Total course hours taught 2020 – 2021 Academic Year, classes ≥ 5 students:		***16***	
2019 – 2020 Academic year:			
AE 522 Aerospace Systems Design II	Sp/2020	4hrs	6*
AE 592 Special Problems	Sp/2020	3hrs	3
AE 722 Aerospace Design Lab II	Sp/2020	4hrs	10*

AE 892 Special Problems for AE Grad. Students	Sp/2020	3hr	2
AE 895 MS Thesis Project	Sp/2020	3hr	1
AE 996 Ph.D. Dissertation	Sp/2020	3hrs	1*
AE 521 Aerospace Systems Design I	Fa/2019	4hrs	43*
AE 721 Aerospace Design Lab I	Fa/2019	4hrs	20*
AE 996 Ph.D. Dissertation	Fa/2019	3hrs	1*

Total number of courses taught 2019 – 2020 Academic Year, classes ≥ 5 students: ***4***
Total course hours taught 2019 – 2020 Academic Year, classes ≥ 5 students: ***16***

2018 – 2019 Academic year:

AE 522 Aerospace Systems Design II	Sp/2019	4hrs	5*
AE 722 Aerospace Design Lab II	Sp/2019	4hrs	8*
AE 592 Weaponeering	Sp/2019	3hrs	12
AE 790 Special Problems	Sp/2019	3hr	2
AE 996 Ph.D. Dissertation	Sp/2019	3hrs	1*
AE 521 Aerospace Systems Design I	Fa/2018	4hrs	28*
AE 721 Aerospace Design Lab I	Fa/2018	4hrs	5*
AE 996 Ph.D. Dissertation	Fa/2018	3hrs	1*

Total number of courses taught 2018 – 2019 Academic Year, classes ≥ 5 students: ***5***
Total course hours taught 2018 – 2019 Academic Year, classes ≥ 5 students: ***19***

2017 – 2018 Academic year:

AE 522 Aerospace Systems Design II	Sp/2018	4hrs	5*
AE 722 Aerospace Design Lab II	Sp/2018	4hrs	1*
AE 748 Helicopter Aerodynamics	Sp/2018	3hrs	12‡
AE 790 Special Problems	Sp/2018	3hr	2
AE 521 Aerospace Systems Design I	Fa/2017	4hrs	35*
AE 592 Special Problems in Aero. Engineering	Fa/2017	3hrs	3
AE 721 Aerospace Design Lab I	Fa/2017	4hrs	10*
AE 996 Ph.D. Dissertation	Fa/2017	3hrs	1*

Total number of courses taught 2017 – 2018 Academic Year, classes ≥ 5 students: ***4***
Total course hours taught 2017 – 2018 Academic Year, classes ≥ 5 students: ***15***

2016 – 2017 Academic year:

AE 522 Aerospace Systems Design II	Sp/2017	4hrs	5
AE 592 Weaponeering	Sp/2017	3hrs	14
AE 790 Special Problems	Sp/2017	3hr	1
AE 892 MS Thesis	Sp/2017	3hrs	2*
AE 521 Aerospace Systems Design I	Fa/2016	4hrs	29*
AE 592 Special Problems in Aero. Engineering	Fa/2016	var.	1
AE 721 Aerospace Design Lab I	Fa/2016	8rs	7*
AE 895 MS Thesis	Fa/2016	3hrs	2*

Total number of courses taught 2016 – 2017 Academic Year, classes ≥ 5 students: ***3***
Total course hours taught 2016 – 2017 Academic Year, classes ≥ 5 students: ***15***

2015 – 2016 Academic year:

AE 522 Aerospace Systems Design II	Sp/2016	4hrs	10*
AE 592 Special Problems	Sp/2016	3hrs	3
AE 690 Professional Development	Sp/2016	1hr	9
AE 895 MS Thesis	Sp/2016	3hrs	2*
AE 521 Aerospace Systems Design I	Fa/2015	4hrs	35*
AE 592 Special Problems in Aero. Engineering	Fa/2015	var.	5
AE 721 Aerospace Design Lab I	Fa/2015	4hrs	18*

Total number of courses taught 2015 – 2016 Academic Year, classes ≥ 5 students: ***4***

Total course hours taught 2015 – 2016 Academic Year, classes ≥ 5 students: ***16***

2014 – 2015 Academic year:

AE 522 Aerospace Systems Design II	Sp/2015	4hrs	6*
AE 592 Special Problems	Sp/2015	3hrs	1
AE 722 Aerospace Design Lab II	Sp/2015	4hrs	11*
AE 781 Adaptive Aerostructures	Sp/2015	3hrs	8‡
AE 521 Aerospace Systems Design I	Fa/2014	4hrs	32*
AE 592 Special Problems in Aero. Engineering	Fa/2014	var.	3
AE 721 Aerospace Design Lab I	Fa/2014	4hrs	14*

Total number of courses taught 2014 – 2015 Academic Year, classes ≥ 5 students: ***5***
Total course hours taught 2014 – 2015 Academic Year, classes ≥ 5 students: ***19***

AE 895 MS Thesis	Su/2014	var.	2

2013 – 2014 Academic Year:

AE 522 Aerospace Systems Design II	Sp/2014	4hrs	11*
AE 722 Aerospace Design Lab II	Sp/2014	4hrs	6*
AE 748 Helicopter Aerodynamics	Sp/2014	3hrs	8‡
AE 790 Special Problems in Aero. Engineering MS	Sp/2014	var.	1
AE 892 Special Problems in Aero. Engineering Ph.D.	Sp/2014	var.	1
AE 895 M.S. Thesis or Project	Sp/2014	var.	2
AE 521 Aerospace Systems Design I	Fa/2013	4hrs	26*
AE 592 Special Problems in Aero. Engineering	Fa/2013	var.	2
AE 721 Aerospace Design Lab I	Fa/2013	4hrs	11*
AE 892 Special Problems in Aero. Engineering Ph.D.	Fa/2013	var.	1
AE 895 M.S. Thesis or Project	Fa/2013	var.	1

Total number of courses taught 2013 – 2014 Academic Year, classes ≥ 5 students: ***5***
Total course hours taught 2013 – 2014 Academic Year, classes ≥ 5 students: ***19***

2012 – 2013 Academic Year:

AE 221 History of Aircraft Design w/J. Roskam(50%)	Sp/2013	3hrs	14
AE 522 Aerospace Systems Design II	Sp/2013	4hrs	12*
AE 592 Special Problems in Aero. Engineering	Sp/2012	var.	2
AE 722 Aerospace Design Lab II	Sp/2013	4hrs	2
AE 781 Adaptive Aerostructures	Sp/2013	3hrs	19*‡
AE 790 Special Problems in Aero. Engineering MS	Sp/2013	var.	1
AE 245 Intro. To Aerospace Engineering	Fa/2012	3hrs	79*
AE 521 Aerospace Systems Design I	Fa/2012	4hrs	23*
AE 592 Special Problems in Aero. Engineering	Fa/2012	var.	1
AE 721 Aerospace Design Lab I	Fa/2012	4hrs	6*
AE 790 Special Problems in Aero. Engineering MS	Fa/2012	var.	1
AE 890 ME Internship	Fa/2012	var.	1

Total number of courses taught 2012 – 2013 Academic Year, classes ≥ 5 students: ***6***
Total course hours taught 2012 – 2013 Academic Year, classes ≥ 5 students: ***21***

AE 790 Special Problems in Aero. Engineering MS	Su/2012	var.	1
AE 895 M.S. Thesis or Project	Su/2012	var.	2

2011 – 2012 Academic Year:

AE 221 History of Aircraft Design w/J. Roskam(50%)	Sp/2012	2hrs	24
AE 522 Aerospace Systems Design II	Sp/2012	4hrs	7*
AE 790 Special Problems in Aero. Engineering MS	Sp/2012	var.	1
AE 895 M.S. Thesis or Project	Sp/2012	var.	3
AE 245 Intro. To Aerospace Engineering	Fa/2011	3hrs	63*
AE 521 Aerospace Systems Design I	Fa/2011	4hrs	31*
AE 592 Special Problems in Aero. Engineering	Fa/2011	var.	1
AE 6/721 Advanced Aircraft Design Techniques I	Fa/2011	3-4hrs	6‡*
AE 895 M.S. Thesis or Project	Fa/2011	var.	2

Total number of courses taught 2011 – 2012 Academic Year, classes ≥ 5 students:			***5***
Total course hours taught 2011 – 2012 Academic Year, classes ≥ 5 students:			***16***

AE 895 M.S. Thesis or Project	Su/2011	var.	2
AE 996 Ph.D. Dissertation	Su/2011	var.	1

2010 – 2011 Academic Year:

AE 522 Aerospace Systems Design II	Sp/2011	4hrs	12*
AE 592 History of Aircraft Design w/J. Roskam(50%)	Sp/2011	1hrs	27
AE 592 Special Problems in Aero. Engineering	Sp/2011	var.	3
AE 781 Adaptive Aerostructures	Sp/2011	3hrs	2‡
AE 790 Special Problems in Aero. Engineering MS	Sp/2011	var.	1
AE 895 M.S. Thesis or Project	Sp/2011	var.	3
AE 996 Ph.D. Dissertation	Sp/2011	var.	1
AE 245 Intro. To Aerospace Engineering	Fa/2010	3hrs	67*
AE 521 Aerospace Systems Design I	Fa/2010	4hrs	28*
AE 592 Special Problems in Aero. Engineering	Fa/2010	var.	1
AE 621 Advanced Aircraft Design Techniques I	Fa/2010	3hrs	14‡
AE 721 Aerospace Design Lab I	Fa/2010	4hrs	7*
AE 895 M.S. Thesis or Project	Fa/2010	var.	1
Total number of courses taught 2010 – 2011 Academic Year, classes ≥ 5 students:			***6***
Total course hours taught 2010 – 2011 Academic Year, classes ≥ 5 students:			***19***

AE 790 Special Problems in Aero. Engineering MS	Su/2010	var.	1
AE 895 M.S. Thesis or Project	Su /2010	var.	1

2009 – 2010 Academic Year:

AE 522 Aerospace Systems Design II	Sp/2010	4hrs	16*
AE 748 Helicopter Aerodynamics	Sp/2010	3hrs	14‡*
AE 895 M.S. Thesis or Project	Sp /2010	var.	2
AE 245 Intro. To Aerospace Engineering	Fa/2009	3hrs	50*
AE 521 Aerospace Systems Design I	Fa/2009	4hrs	30*
AE 621 Advanced Aircraft Design Techniques I	Fa/2009	3hrs	12*‡
AE 790 Special Problems in Aero. Engineering MS	Fa/2009	var.	1
AE 895 M.S. Thesis or Project	Fa/2009	var.	1
Total number of courses taught 2009 – 2010 Academic Year, classes ≥ 5 students:			***5***
Total course hours taught 2009 – 2010 Academic Year, classes ≥ 5 students:			***17***

AE 895 M.S. Thesis or Project	Su/2009	var.	2
AE 996 Ph.D. Dissertation	Su/2009 v	ar.	1

2008 – 2009 Academic Year:

AE 522 Aerospace Systems Design II	Sp/2009	4hrs	8*
AE 592 Special Problems in Aero. Engineering	Sp/2009	var.	2
AE 781 Adaptive Aerostructures	Sp/2009	3hrs	12‡
AE 790 Special Problems in Aero. Engineering MS	Sp/2009	var.	2
AE 895 M.S. Thesis or Project	Sp /2009	var.	1
AE 996 Ph.D. Dissertation	Sp/2009	var.	1
AE 521 Aerospace Systems Design I	Fa/2008	4hrs	26*
AE 592 Advanced Aircraft Design Lab I	Fa/2008	3-4hrs	13*‡
AE 790 Special Problems in Aero. Engineering MS	Fa/2008	var.	1
AE 895 M.S. Thesis or Project	Fa/2008	var.	2
AE 996 Ph.D. Dissertation	Fa/2008	var.	1
Total number of courses taught 2008 – 2009 Academic Year, classes ≥ 5 students:			***4***
Total course hours taught 2008 – 2009 Academic Year, classes ≥ 5 students:			***14***

AE 790 Special Problems in Aero. Engineering MS	Su/2008	var.	1
AE 895 M.S. Thesis or Project	Su/2008	var.	2
AE 996 Ph.D. Dissertation	Su/2008	var.	1

2007 – 2008 Academic Year:

AE 521 Aerospace Systems Design I	Sp/2008	4hrs	1
AE 522 Aerospace Systems Design II	Sp/2008	4hrs	10*
AE 592 Special Problems in Aero. Engineering	Sp/2008	var.	3
AE 790 Special Problems in Aero. Engineering MS	Sp/2008	var.	1
AE 895 M.S. Thesis or Project	Sp/2008	var.	1
AE 996 Ph.D. Dissertation	Sp/2008	var.	1
AE 521 Aerospace Systems Design I	Fa/2007	4hrs	19*
AE 592 Advanced Aircraft Design Lab I	Fa/2007	3-4hrs	12*‡
AE 895 M.S. Thesis or Project	Fa/2007	var.	2
AE 896 M.E. Project	Fa/2007	var.	1
AE 996 Ph.D. Dissertation	Fa/2007	var.	1
Total number of courses taught 2007 – 2008 Academic Year, classes ≥ 5 students:			***3***
Total course hours taught 2007 – 2008 Academic Year, classes ≥ 5 students:			***11***

AE 895 M.S. Thesis or Project	Su/2007	var.	1

2006 – 2007 Academic Year:

AE 522 Aerospace Systems Design II	Sp/2007	4hrs	15*
AE 592 Adaptive Aerostructures	Sp/2007	3hrs	7*‡
AE 790 Special Problems in Aero. Engineering MS	Sp/2007	var.	1
AE 895 M.S. Thesis or Project	Sp/2007	var.	3
Hnrs 190 Freshman Honors Tutorial	Fa/2006	1hr	13
AE 521 Aerospace Systems Design I	Fa/2006	4hrs	28*
AE 592 Aircraft Design Lab I	Fa/2006	3-4hrs	4
AE 790 Advanced Aircraft Design Lab/MS	Fa/2006	3hrs	5*‡
AE 895 M.S. Thesis or Project	Fa/2006	var.	2
Total number of courses taught 2006 – 2007 Academic Year, classes ≥ 5 students:			***5***
Total course hours taught 2006 – 2007 Academic Year, classes ≥ 5 students:			***15***

2005 – 2006 Academic Year:

AE 421 Aerospace Computer Graphics	Sp/2006	4hrs	26*
AE 592 Adaptive Aerostructures	Sp/2006	3hrs	1
AE 895 M.S. Thesis or Project	Sp/2006	var.	1
AE 790 Adaptive Aerostructures	Fa/2005	3hrs	8*‡
Total number of courses taught 2005 – 2006 Academic Year, classes ≥ 5 students:			***2***
Total course hours taught 2005 – 2006 Academic Year, classes ≥ 5 students:			***7***

1.2 UNDERGRADUATE ADVISING RECORD

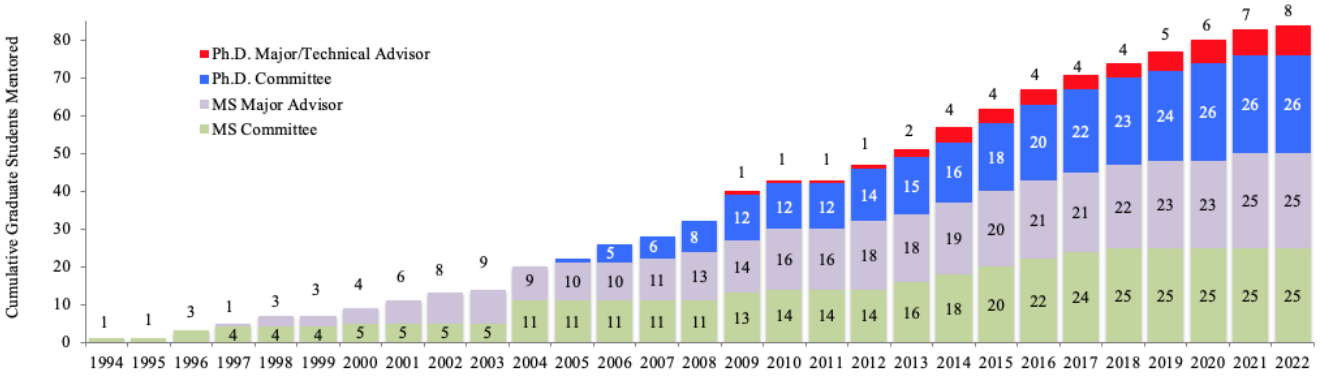
Academic Year	Approximate Number of Students (Source: A. Borton)
2006 -- 2022	22/yr domestic
2006 -- 2022	6/yr exchange/foreign/study abroad

1.3 GRADUATE AND POSTGRADUATE ADVISING RECORD

Record of Doctoral Student Mentoring

No. of Fulbright Scholar Ph.D. Students as Major Technical Advisor	1
No. of Minority Ph.D. Students Advised as Major Technical Advisor	1
No. of Female Ph.D Students Advised as Major Technical Advisor	2
No. of Nontraditional Ph.D. Students advised as Major Technical Advisor	1
Number of former Ph.D. Students Currently Serving as Faculty Members	2
No. of International AIAA Awards Won Directly by Ph.D. Students	3
No. of Aircraft Design Competition Awards won by Students of Ph.D. Students	4

No. of Ph.D. Students Advised Since Arriving at KU Major Technical Advisor	5
No. of Ph.D. Students Advised over Working Lifetime as Committee Member	23



Graduate Students Mentored and Graduated 1993 - 2022

1.4 COMMITTEE CHAIR & MAJOR TECHNICAL ADVISOR: DOCTORAL

Ms. (Dr.) Lauren Schumacher — Graduation Date: 5/20
FUNCTIONS AS MAJOR TECHNICAL ADVISOR: All traditional duties including securing funding for student and funding all equipment and supplies for project. Accommodated project in Adaptive Aerostructures Laboratory
ADVISING LOAD: 1 – 2 hrs/wk for three years

Mr. (Dr.) Richard Bramlette — Co-Advisor with C. Depcik — Graduation Date: 12/14
FUNCTIONS AS MAJOR TECHNICAL ADVISOR: wrote dissertation funding proposal, secured funding, built part of test rig, developed first-order analytical models. Accommodated project in Adaptive Aerostructures Laboratory
ADVISING LOAD: 1 – 2 hrs/wk for three years

Ms. (Dr.) Alisha Elmore — Co-Advisor with S. Rolfe — Graduation Date: 8/14
FUNCTIONS AS MAJOR TECHNICAL ADVISOR: designed, built, analyzed artificial crack test apparatus and piezoelectric H-frame sensor. Designed, built & analyzed all electronics & ran tests.
ADVISING LOAD: 1 – 2 hrs/wk for two years

Mr. (Dr.) Roelof Vos — Aerospace Engineering (Honors) — Graduation Date: 9/09
FUNCTIONS AS MAJOR TECHNICAL ADVISOR: wrote dissertation funding proposal, secured funding, built part of test rig, developed first-order analytical models. Accommodated project in Adaptive Aerostructures Laboratory
ADVISING LOAD: 1 – 2 hrs/wk for three years

1.5 COMMITTEE CHAIR & MAJOR TECHNICAL ADVISOR: MASTERS

Major Technical Advisor and Chair:

Mr. Bo Xu	Aerospace Engineering (KU)	Graduation Date: 12/23
Mr. Mason Denneler	Aerospace Engineering (KU)	Graduation Date: 5/23
Ms. Shanya Dorsey	Aerospace Engineering (KU)	Graduation Date: 5/23
Mr. Nathan Wolf	Aerospace Engineering (KU)	Graduation Date: 5/23
Mr. Patrick McNamee	Aerospace Engineering (KU)	Graduation Date: 12/19
Mr. Drew Darrah	Aerospace Engineering (KU)	Graduation Date: 5/18
Ms. Lauren Schumacher	Aerospace Engineering (KU)	Graduation Date: 8/15
Ms. Samantha Schueler	Aerospace Engineering (KU)	Graduation Date: 8/14
Mr. Ryan Barnhart	Aerospace Engineering (KU)	Graduation Date: 5/12
Mr. Scott Cravens	Aerospace Engineering (KU)	Graduation Date: 5/12
Mr. Richard Bramlette	Aerospace Engineering (KU)	Graduation Date: 5/12
Mr. Thomas Sinn	Aerospace Engineering (Honors) (KU)	Graduation Date: 5/10
Mr. Michael Brennison	Aerospace Engineering (KU)	Graduation Date: 5/10
Mr. Kenneth Lee	Aerospace Engineering (KU)	Graduation Date: 12/09
Mr. David Borys	Aerospace Engineering (KU)	Graduation Date: 5/08
Ms. Chiara de Zanna	Aerospace Eng (TU Delft)	Graduation Date: 7/07

Mr. Roelof Vos	Aerospace Eng (TU Delft)	Graduation Date:7/05
Mr. Rushabh Kothari	Aerospace Engineering (KU)	Graduation Date:5/03
Mr. Kenneth Fidler	Aerospace Engineering (KU)	Graduation Date: 12/02
Mr. Joshua Frommer	Aerospace Engineering (KU)	Graduation Date: 5/02
Mr. Christoph Burger	Aerospace Eng. (TU Stuttgart)	Graduation Date: 12/01
Mr. Juan Pablo Melian	Aerospace Eng. (TU Stuttgart)	Graduation Date: 5/01
Mr. Nathan Howard	Aerospace Engineering (AU)	Graduation Date: 5/00
Mr. James Stutts	Aerospace Engineering (AU)	Graduation Date: 6/98
Mr. Daniel Bryant	Aerospace Engineering (AU)	Graduation Date: 6/98
Mr. Frederick1 Brozoski	Aerospace Engineering (AU)	Graduation Date: 12/97

1.6 OTHER GRADUATE COMMITTEE SERVICE

Major Ph.D. Technical Advisor (heavy advising load, that of a chair, but named neither chair nor co-chair):

Mr. (Dr.) Gary Gene Simmons Chair, C. Bennett Graduation Date: 12/13

FUNCTIONS AS MAJOR TECHNICAL ADVISOR: Conceived topic of Ph.D. research, wrote much of Ph.D. funding proposal, secured funding, conceived tool configuration, designed, modeled and reduced experimental apparatus to practice, acquired piezoelectric elements, assembled piezoelectric elements, rendered experimental apparatus safe, assembled experimental apparatus, assembled high voltage driving network, treated specimens, accommodated treatment apparatus in Adaptive Aerostructures Laboratory, reduced data & presented paper at open conference (neither student nor chair chose to attend conference).

ADVISING LOAD: 1 – 3 hrs/wk for 2 yrs + 2 – 5 hrs/wk for two years

Ph.D. Committee Member:

Ms. Zhenghao Lin	Aerospace Engineering (KU)	Graduation Date: 5/26
Mr. Khaled Almazam	Architecture (KU)	Graduation Date: 5/23
Mr. Omar Humadian	Architecture (KU)	Graduation Date: 5/23
Mr. Ankur Santaji	Aerospace Engineering (KU)	Graduation Date: 5/21
Ms. Eileen Cadel	Mechanical Engineering (KU)	Graduation Date: 12/20
Mr. Marwan Dessouki	Aerospace Engineering (KU)	Graduation Date: 12/20
Mr. Akshay Basavaraj	Aerospace Engineering (KU)	Graduation Date: 8/19
Ms. Afnan Barri	Architecture (KU)	Graduation Date: 5/18
Ms. Chenqi Zhou	Civil Engineering (KU)	Graduation Date: 5/17
Ms. Leslie Smith	Aerospace Engineering (KU)	Graduation Date: 5/15
Mr. Deep Kumar Khatri	Civil Engineering (KU)	Graduation Date: 5/14
Ms. Emily Arnold	Aerospace Engineering (KU)	Graduation Date: 6/13
Mr. Fatih Aldemar	Civil Engineering (KU)	Graduation Date: 5/12
Ms. Amanda Hartman	Civil Engineering (KU)	Graduation Date: 5/12
Mr. Roeland de Breuker	Aerospace Engineering (TU Delft)	Graduation Date; 6/09
Mr. Nicolas Jaumard	Mechanical Engineering (KU)	Graduation Date: 5/09
Mr. Kyung Pyo Kim	Aerospace Engineering (KU)	Graduation Date: 5/09
Mr. Wonjin Jin	Aerospace Engineering (KU)	Graduation Date 5/09
Mr. Seung Jae Hwang	Aerospace Engineering (KU)	Graduation Date 5/08
Mr. Wanbo Liu	Aerospace Engineering (KU)	Graduation Date 5/07
Mr. Giorgos Giannopolos	Royal Military Acad., BE	Graduation Date 5/08
Mr. Christoph Burger	Aerospace Engineering (AU)	Graduation Date: 12/06
Mr. Ashok Ghandi	Aerospace Engineering (KU)	Graduation Date: 5/06
Mr. Samikkannu Raja	Mech. Eng. (IIT Kharagpur)	Graduation Date: 5/06
Mr. Paolo Tiso	Aerospace Engineering (TU Delft)	Graduation Date: 5/06
Mr. Jeremy Hanna	Physics (KU)	Graduation Date: 5/05

MS Committee Member:

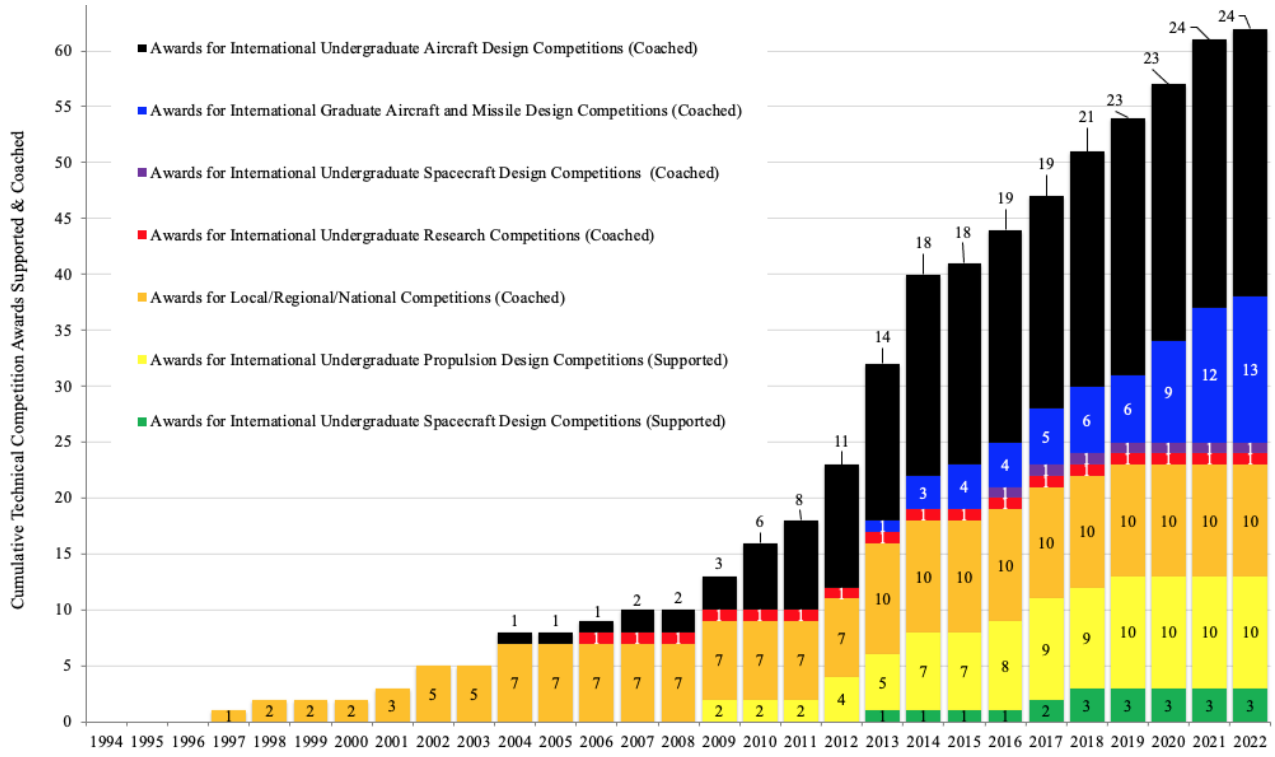
Mr. Joseph Knighton	Aerospace Engineering (KU)	Graduation Date: 12/18
Ms. Alejandra Escalera	Aerospace Engineering (KU)	Graduation Date: 12/18

Ms. Lindsay Freund	Architecture (KU)	Graduation Date: 5/18
Mr. Riley Sprunger	Aerospace Engineering (KU)	Graduation Date: 5/18
Mr. Pedro Mendoza	Aerospace Engineering (KU)	Graduation Date: 12/17
Mr. Brandon Neal	Mechanical Engineering (KU)	Graduation Date: 12/14
Mr. Eric Bonet	Civil Engineering (KU)	Graduation Date; 5/14
Ms. Amanda Renth	Mechanical Engineering (KU)	Graduation Date: 12/13
Mr. Jeffrey Wheeler	Civil Engineering (KU)	Graduation Date: 5/13
Mr. Joshua Crain	Civil Engineering (KU)	Graduation Date: 5/10
Mr. Michael van Schravendijk	Aerospace Eng. (TU Delft)	Graduation Date: 6/09
Mr. Mark Groen	Aerospace Eng. (TU Delft)	Graduation Date: 6/09
Mr. Roelof Vos	Aerospace Eng. (TU Delft)	Graduation Date: 6/05
Mr. Ross McMurtry	Aero. Eng. (Imperial College, UK)	Graduation Date: 5/04
Mr. Arjen de Jong	Aerospace Eng. (TU Delft)	Graduation Date: 5/04
Mr. Koen Artois	Aerospace Eng. (TU Delft)	Graduation Date: 5/04
Mr. Roeland De Breuker	Aerospace Eng. (TU Delft)	Graduation Date: 5/04
Mr. Eelco Manders	Aerospace Engineering (TU Delft)	Graduation Date: 5/04
Mr. Guido Kerbusch	Aerospace Eng. (TU Delft)	Graduation Date: 1/04
Mr. Laurence Venne	Aerospace Engineering (TU Delft)	Graduation Date: 5/00
Mr. Brett Blazer	Materials Engineering (AU)	Graduation Date: 12/96
Ms. Debra Vasquez	Aerospace Engineering (AU)	Graduation Date: 8/96
Mr. David Anderson	Materials Engineering (AU)	Graduation Date: 8/97
Mr. Daniel Ball	Aerospace Engineering (AU)	Graduation Date: 5/94

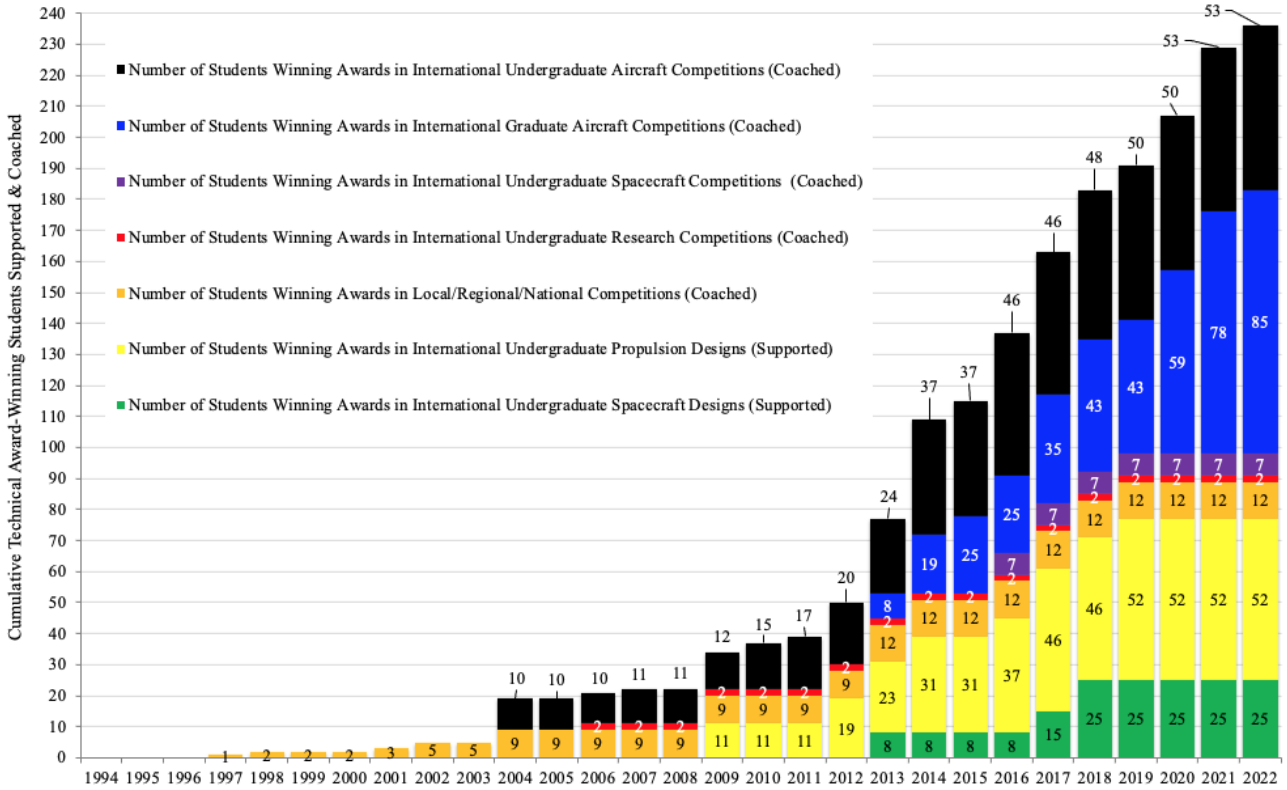
1.7 HONORS AND AWARDS FOR TEACHING AND ADVISING

1. Named 2014 Gould Award Winner for School of Engineering Advising
2. Winner of the 2008 American Institute of Aeronautics and Astronautics Abe Zarem Educator Award
3. Named the 2003 Outstanding Faculty Member for the Aerospace Engineering Curriculum
4. Named the 2003 Outstanding Faculty Member for the College of Engineering
5. Awarded the Fred H. Pumphrey Teaching Award for 2003
6. President William F. Walker Merit Teaching Award, 2001 – 2002 Academic Year
7. College of Engineering Outstanding Faculty Member for the 1999 – 2000 Academic Year
8. Auburn University Mortar Board Favorite Educator Award, 1995 - 1996 Academic Year
9. Outstanding Faculty Member of the Year Award, 1993 - 1994, Auburn University Chapter of the AIAA

1.8 RECORD OF INSTRUCTING, SUPPORTING AND COACHING OF UNDERGRADUATE AND GRADUATE TECHNICAL COMPETITORS (PRIMARY APPOINTMENT FUNCTION AT KU)



Award-Winning Student Competitions Supported and Coached (62 total, 4/yr average 2012 - 2022)



Award-Winning Students Supported and Coached (236 total, 20/yr average 2012 - 2022)

1.8.1 AWARD WINNING INTERNATIONAL UNDERGRADUATE SPACECRAFT DESIGNS SUPPORTED

1. **First Place,** American Institute of Aeronautics and Astronautics Spacecraft Design Competition, 2017 - 2018, "Pluto Research Orbiter Studying Experimental Rocket Propulsion for Improving trans-Neptunian Exploration (Proserpine)," Taylor George (Team Leader), Jordan Alonzo, Frank Bonet III, Jack Cozzi, Miranda Myer, James Peters, Nathaniel Routh, Bradley Schroeder, Joseph Vincent, Luke Wehrkamp, Dr. Mark Ewing Advisor, R. Barrett Aerospace Design I Instructor.
2. **First Place,** American Institute of Aeronautics and Astronautics Spacecraft Design Competition, 2016 - 2017, "Mars Orbiter Operating Near Satellites (MOONS)," Bailey Miller (Team Leader), Arno Prinsloo, Brian Frew, Brooke Reid, Colin Murphy, Conner Murphy, Philip Guzman, Dr. Mark Ewing Advisor, R. Barrett Aerospace Design I Instructor.
3. **Second Place,** American Institute of Aeronautics and Astronautics Spacecraft Design Competition, 2012 - 2013, "Jay Hopper Reusable Launch System," Jordan Ashley (Team Leader), Hanna Cosgrove, Samona Estwick, Ben Hofmeier, Chris Melvin, Phi Nguyen, Alex Polsey, Matt Vestal, Dr. Mark Ewing Primary, R. Barrett Aerospace Design I Instructor.

1.8.2 AWARD WINNING INTERNATIONAL UNDERGRADUATE PROPULSION DESIGNS SUPPORTED

1. **First Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2016 - 2017, Thomas Row (Team Leader), Elliot Bicker, Alex Carnoali, Antonio Schoneich, Austin Tuggle, Christopher Bynum, Cody Hill, Juan Castro, Libby Stoops, Drs. Saeed Farokhi and Ray Taghavi, Advisors, R. Barrett Aerospace Design I Instructor.
2. **First Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2015 - 2016, Kyle Thompson (Team Leader), Daniel Fought, Charles Yeo, Timothy Luna, Weitung Liu, Zachary Smith, Drs. Saeed Farokhi and Ray Taghavi, Advisors, R. Barrett Aerospace Design I Instructor.
3. **First Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2013 - 2014, Sunayan Mullick (Team Leader), Samuel Cott, Adrian Kok Chang Lee, Alex Sizemore, Drs. Saeed Farokhi and Ray Taghavi, Advisors, R. Barrett Aerospace Design I Instructor.
4. **Second Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2013 - 2014, Mary Pat Whittaker (Team Leader), Sean Derry, Tonderai Kambarami, Yinglong Xu, Drs. Saeed Farokhi and Ray Taghavi, Advisors, R. Barrett Aerospace Design I Instructor.
5. **Second Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2012 - 2013, Abhishek Chakarbati (Team Leader), Shina Gupta, Kanin Homsvarian, Adam D'Silva, Dr. Saeed Farokhi, Advisor, R. Barrett Aerospace Design I Instructor.
6. **First Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2011 - 2012, Daniel Prather (Team Leader), Aditya S. Ghate, William VanSkike, Matthew Williams, Drs. Saeed Farokhi, Advisor, R. Barrett Aerospace Design I Instructor.
7. **Third Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2011 - 2012, Justin Howard (Team Leader), Jin Seon Kim, Sara Elizabeth McCandless, Ryan Schirmer, Drs. Saeed Farokhi, Advisor, R. Barrett Aerospace Design I Instructor.
8. **First Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2008 - 2009, "Jackt-524

Smart Variable-Cycle Propulsion System Design for Commercial Aircraft," Carl Amerine (Team Leader), Jake Bowden, Kodi Caster, Travis Cravens, Adam Saverino, Dr. Saeed Farokhi, Advisor, R. Barrett Aerospace Design I Instructor.

9. **Second Place,** American Institute of Aeronautics and Astronautics Propulsion Design Competition, 2008 - 2009, "Janus," William Pflug (Team Leader), Matthew Brown, Piyush Metha, Thai Nguyen, Leslie Smith, Jake Wooten, Dr. Saeed Farokhi, Advisor, R. Barrett Aerospace Design I Instructor.

1.8.3 AWARD WINNING INTERNATIONAL UNDERGRADUATE RESEARCH PROJECTS COACHED

- **First Place Winner,** American Institute of Aeronautics and Astronautics International Undergraduate Student Paper Competition, Bramlette, R. and Leurck, R., "A Method for Control Surface Deflection Utilizing Piezoceramic Bimorph Actuators," January 2006.

1.8.4 AWARD WINNING INTERNATIONAL UNDERGRADUATE SPACECRAFT DESIGNS COACHED

- **Top-3 Finish,** NASA/Revolutionary Aerospace Systems Concepts - Academic Linkage (RASC-AL) 2016 "*1-G Earth Independent Space Station*, Colin Murphy, John Ink, Brian Frew, Ian Shepard, Kyri Barton, Brooke Reid, Sebastian Thomas."

1.8.5 AWARD WINNING INTERNATIONAL GRADUATE AIRCRAFT DESIGNS COACHED

1. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2021 - 2022 International Graduate Team Missile Design Competition, "*HyperHawk*," Nathan Wolf (Leader), Isaac Beech, Justin Clough, Garin McKenna, Gerell Miller, Zach Rhodes, Jack Schneider.
2. **First Place Winner,** American Institute of Aeronautics and Astronautics 2020 - 2021 International Graduate Team Aircraft Design Competition, "*Skyblazer*," Lendon Jackson (Team Leader), Olivia Scharf, Bhawantha Nilaweera, Matthew Grebe, Raghav Parikh, Skyler Jacob, Krisna Sitaula, Brennan Wheatley, Renaldo Rivera, Ethan Seiler.
3. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2020 - 2021 International Graduate Team Missile Design Competition, "*HFB-WEB*," Jack Barkei, Bobby Bowes, Christopher Eavenson, Samantha Friess, Brian Von Holtz, Alex Welicky.
4. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2020 - 2021 International Graduate Team Missile Design Competition, "*Valkyrie*," Nathan Wolf, Joe Coldiron, Austin Dooley
5. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2019 - 2020 International Graduate Team Missile Design Competition, "*MQM-1A Road Runner*," Nathan Sunnarborg (Team Leader), Jacob Gorman, Justin Matt, Steven Meis, Andrew Mills, Maxwell Johnson.
6. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2019 - 2020 International Graduate Team Missile Design Competition, "*FREEDOM (Fast Response Enemy Emulating Defense Operations Missile* Nicolas Stefan (Team Leader), Jackie Rech, Kyle Herda, Kylie Crawford, Paul Pedari.
7. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2019 - 2020 International Graduate Team Aircraft Design Competition, Brio Ratzlaff (Team Leader), Grand Godfrey, Francisco Caceres, Thomas Kennedy, Tyler Schwallie.
8. **First Place Award,** Boeing GoFly Competition 2018, "Mamba," Lauren Schumacher (Team Leader), John Haug, Martin Mendoza, Patrick McNamee, Joshua Mudd, Ankur Patil, Dalton Prins, Nicholas Werner.
9. **First Place Winner,** American Institute of Aeronautics and Astronautics 2016 - 2017 International Graduate Team Aircraft Design Competition, Desprüngdarcost Aerospace Tachion Business Jet Series, Marwan Dessouki, Italo Costa, Drew Darrah, Martin Mendoza, Riley Sprunger, Michael Moschetti, Taylor George, Kyle Herda, Megan Burns, Yizi Zhou.

10. **First Place Winner,** Wing-in-Ground Effect Aircraft/Power Electronics Systems and Applications (PESA), Eric Bodlak (Team Leader), Lauren Schumacher, Dhruv Chawla, Vidyasagar Jaju, Jeevan Teja Kolli, Ankur Patil, 2015 International Graduate Team Aircraft Design Competition, Hong Kong.

11. **First Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Graduate Team Aircraft Design Competition, "Supersonic Multi-Utility Aeroelastic Reconfigurable Test-bed," Co-Advisor, Prof. Roelof Vos, Malcom Brown, Koen van de Kerkhof, Raphael Klein, Martijn Roelofs, Niels Singh, Daan Westerveld.

12. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Graduate Team Aircraft Design Competition, "The Delta Spike, Supersonic Multi-Use Technology Test-bed," James Sellers, Julian McCafferty, Katie Constant, Adam D'Silva, Richard Bramlette.

13. **First Place Winner,** American Institute of Aeronautics and Astronautics 2012 - 2013 International Graduate Team Aircraft Design Competition, "High Altitude Airborne Laser Counterweapon System, Cyclops Uninhabited Aerial System (UAS)," Samantha Schueler (Team Leader), Amir Bachelani, Julian Bettoni, Stuart Hunsinger, Kirill Nadtochiy, Trevor Schlieper, Graham Ray, Davis Woodward.

1.8.6 AWARD WINNING INTERNATIONAL UNDERGRADUATE AIRCRAFT DESIGNS COACHED

1. **First Place for New Entrants Winner,** Vertical Flight Society (VFS) 2020 - 2021 International Undergraduate Individual Rotorcraft Design Competition, "QuadRocket," Mason Denneler, Zach Schwab, Micaela Crispin.

2. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2018 - 2019 International Undergraduate Individual Aircraft Design Competition, "Pteslauar," Nathon Simon.

3. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2018 - 2019 International Undergraduate Individual Aircraft Design Competition, "De Hond," Jake Rogers.

4. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2017 - 2018 International Undergraduate Individual Aircraft Design Competition, "A-21 Valkyrie," Frank Bonet.

5. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2017 - 2018 International Undergraduate Individual Aircraft Design Competition, "A-X Overseer," Pedro Toledo.

6. **First Place Winner,** American Institute of Aeronautics and Astronautics 2015 - 2016 International Undergraduate Team Aircraft Design Competition, "Screaming Dingos Aerobatic Aircraft," Riley Sprunger (Team Leader), Joel Eppler, Jefferson Vlasnik, Taylor George, Cameron Clanchy, Justin Fox, Michael Gritsch, Joel Kennedy, Liam Murphy.

7. **First Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Undergraduate Team Aircraft Design Competition, "Design and Analysis of the Jayhawk Economic Turboprop Transport (J.E.T.T), Brandon Basgall, Katie Constant, Eleazar Lachino, Adrian Lee, Emily Thompson, Alejandra Escalera.

8. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Undergraduate Team Aircraft Design Competition, "Preliminary Design of the Dragonfly," Ryan Evans, Nathan Smith, Ryan Su, Yinglong Xu, Luiz Toledo.

9. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Undergraduate Individual Aircraft Design Competition, "Preliminary Design of the Spica Nox Jet Trainer," Alejandra Escalera.

10. **Third Place Winner,** American Institute of Aeronautics and Astronautics 2013 - 2014 International Undergraduate Individual Aircraft Design Competition, "Design and Analysis of the Pegasus Jet Trainer," Eleazar Lachino.

11. **First Place Winner,** American Institute of Aeronautics and Astronautics 2013 International Undergraduate Aircraft Design Competition, Raphael Klein, "High Endurance Lightweight Program," 2012 - 2013 Academic Year.

12. **Second Place Winner,** American Institute of Aeronautics and Astronautics International Undergraduate Aircraft Design Competition, Joshua Holland and Steven Brust, "Rukh HALE UAV," 2012 - 2013 Academic Year.

13. **Third Place Winner,** American Institute of Aeronautics and Astronautics International Undergraduate Aircraft Design Competition, Malcom Brown, "Sky-i," 2012 - 2013 Academic Year.

14. **First Place Winner,** American Institute of Aeronautics and Astronautics International Undergraduate Aircraft Design Competition, Samantha Schueler, "Cratus," 2011 - 2012 Academic Year.

15. **Second Place Winner,** American Institute of Aeronautics and Astronautics 2012 International Undergraduate Aircraft Design Competition, Jorrit Vervoordeldonk, "Renosaur," 2011 - 2012 Academic Year.

16. **Third Place Winner,** American Institute of Aeronautics and Astronautics International Undergraduate Aircraft Design Competition, Alex Lopez, "Atlas RX," 2011 - 2012 Academic Year.

17. **2nd Place Winning Team for most weight lofted, 3rd Place Overall,** Society of Automotive Engineers, AeroDesign West Competition, 2010 - 2011 Academic Year.

18. **3rd Place Winner,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, Nathan Roush, "Headless Horseman," 2010 - 2011 Academic Year.

19. **First Place Winner,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, Lauren Fitzpatrick, "Air Fitz," 2009 - 2010 Academic Year.

20. **Second Place Winner,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, Sarah Kulhanek, "Wrigley Jet," 2009 - 2010 Academic Year.

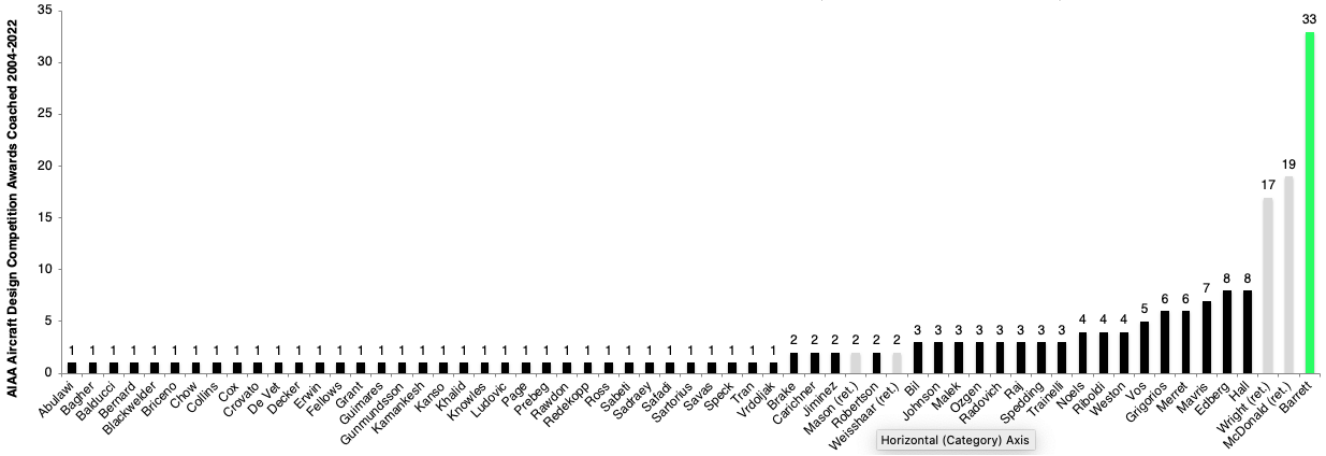
21. **Third Place Winner,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, Christopher Vaughn, "Modern Pioneer," 2009 - 2010 Academic Year.

KANSAS UNIVERSITY CHANCELLOR BERNADETTE GRAY-LITTLE congratulates the KU aerosp design teams, which took their 27th World Championship – more than any other institut for aerospace design. Michael Strickland submitted the photo. *Email your photos to friends ljworld.com or mail them to Friends & Neighbors, P.O. Box 888, Lawrence, KS 66044.*

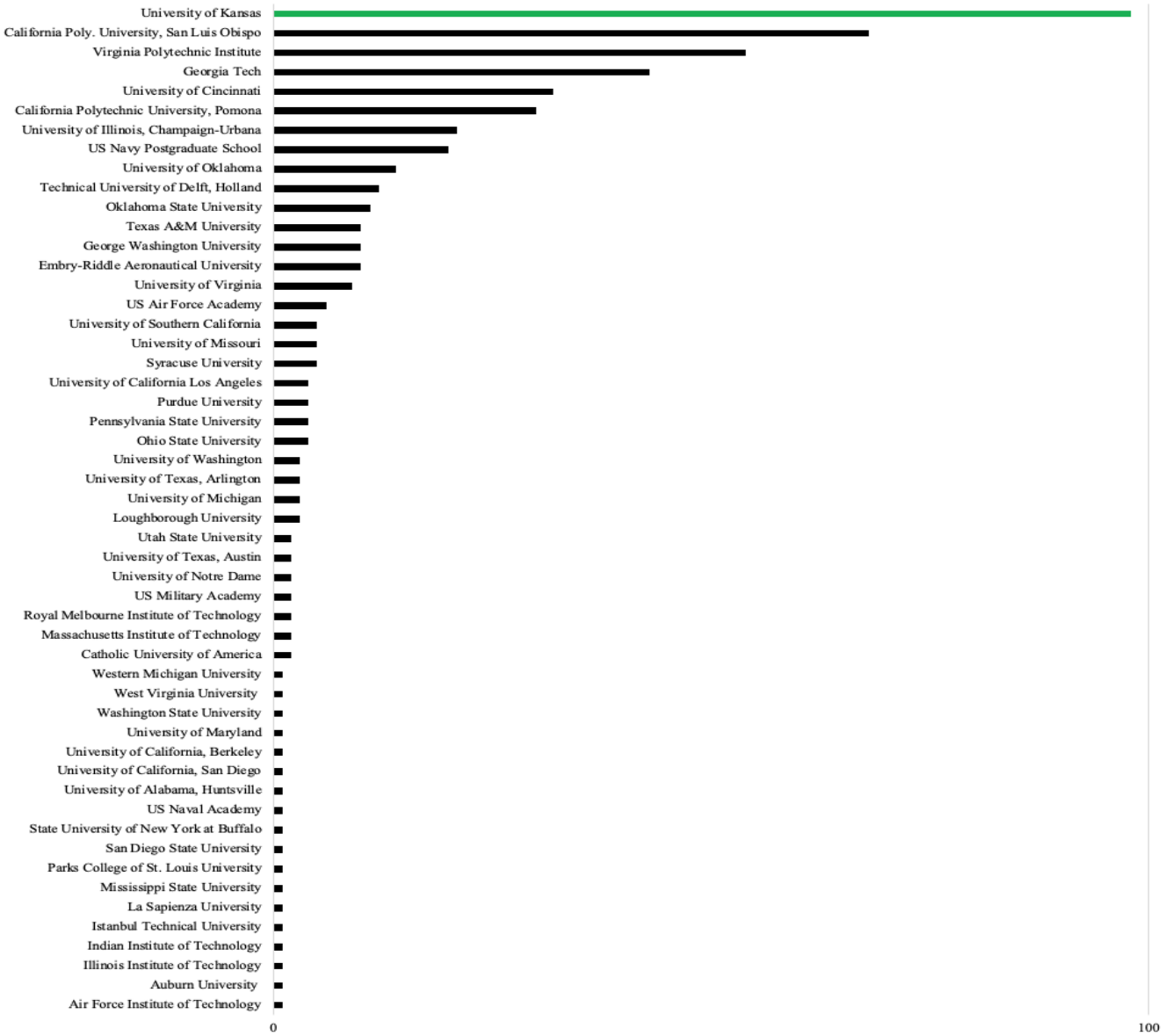
22. **Highest Scoring Student,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, *Arnold, Emily*, "Cooper STOL LSA," Spring 2008 - 2009 Academic Year.

23. **First Place Winner,** American Institute of Aeronautics and Astronautics International Student Aircraft Design Competition, Nishio, Nobuya, "A Light Sport Aircraft Design," 2006-2007 Academic Year.

24. **Third Place Winner,** American Institute of Aeronautics and Astronautics International Team Aircraft Design Competition, Alikhanbagi, R., Buczynski, A., Conradi, I., Foeken, M., De Leege, A., Miedema, T., Scheps, C., Schimmel, E., Talagani, M., De Wachter, A., "Firefly Airport Adaptive Regional Transport," Technical University of Delft, Holland July 2004.



All AIAA International Aircraft Design Competition Award Winning Coaches 2004 - 2022 (grey = retired)



Record of All AIAA International Aerospace Design Competition Awards 1980 - 2022 by Institution

2. PROFESSIONAL PERFORMANCE RECORD: TECHNICAL DEMONSTRATIONS & AIRSHOWS

1 Barrett, R., and Yang, X. F., "Miniaturization of Patterned Multilayer PZT Actuators using Integrated Circuit Technology," demonstration at the SPIE 1995 Smart Structures and Materials Conference, San Diego, CA, February, 1994.

2 Barrett, R., "Flight Control Applications of Adaptive Aerostructures," invited lecture and associated technical exhibition and demonstration at the NASA Langley Research Center Workshop on Enabling Technologies for Smart Aircraft Systems," May 14 - 16, Hampton, VA 1996.

3 Flight demonstration and initial public presentation of the LuMAV-1AS "Kolibri," the world's first rotary-wing micro aerial vehicle (MAV) for Department of Defense CounterDrug Technology Office, Carbondale, Illinois, 9 September 1997.

4 Barrett, R., "Recent Advances in Adaptive Aerostructures: Designing for Flight Control," invited paper, lecture and demonstrations at the 1st European Workshop on Smart Systems, Demonstrators, Concepts and Applications, Harrogate, UK, 6 - 8 July 1998.

5 Barrett, R., Adaptive Aerostructures: Demonstration of Flightworthy Hardware, exhibition of flightworthy Flexspar Stabilators at the SMART Demonstrator Workshop, Harrogate, England 6 - 8 July 1998.

6 Flight demonstration and initial public presentation of the LuMAV-2AS, the world's first free-flight rotary-wing micro aerial vehicle (MAV) for the Defense Advanced Research Projects Agency, MacDill AFB, Florida, 27 November 1999.

7 Flight demonstration and initial enabled presentation of the LuMAV-2AS, the world's first free-flight rotary-wing micro aerial vehicle (MAV) for the Defense Advanced Research Projects Agency program manager and SETA, Auburn University, Adaptive Aerostructures Laboratory 17 December 1999.

8 Flight demonstration and initial public presentation of the LuMAV-3AGF, the world's first militarily enabled free-flight rotary-wing micro aerial vehicle (MAV) for the Defense Advanced Research Projects Agency, Quantico Marine Corps Base, Virginia, 23 – 26 September 2000.

9 Barrett, R., "Adaptive Aerostructures Demonstrators – Hover through Hypersonic," Invited Lecture and demonstrators displayed for the technical community at the 4th European Demonstrators Conference, 10 – 15 December 2001, Edinburgh, Scotland.

10 Barrett, R., Fidler, K., and Burger, C., "The XQ-138, a Demonstration of In-Flight Conversion," flying demonstration delivered for Asia Aerospace Managers, Auburn, AL 19 December 2001.

11 Barrett, R., Fidler, K., and Burger, C., "The XQ-138, a Demonstration of In-Flight Conversion," flying demonstration delivered for Asia Aerospace 2002 International Airshow, 26 February – 2 March 2002, Singapore.

12 Barrett, R., Fidler, K., and Burger, C., "The XQ-138, a Demonstration of In-Flight Conversion," flying demonstration delivered at Redstone Arsenal, AL 17 April 2002.

13 Barrett, R., Fidler, K., and Burger, C., "The XQ-138, a Demonstration of In-Flight Conversion, Remote Launch, Surveillance and Battle-Damage Assessment," flying demonstration delivered at Eglin AFB, FL 30 April – 3 May 2002.

14 Barrett, R., Fidler, K., and Burger, C., "The XQ-138, a Demonstration of In-Flight Conversion, Remote Launch, Surveillance and Battle-Damage Assessment," flying demonstration delivered at Ft. Benning, GA, 19 May 2002.

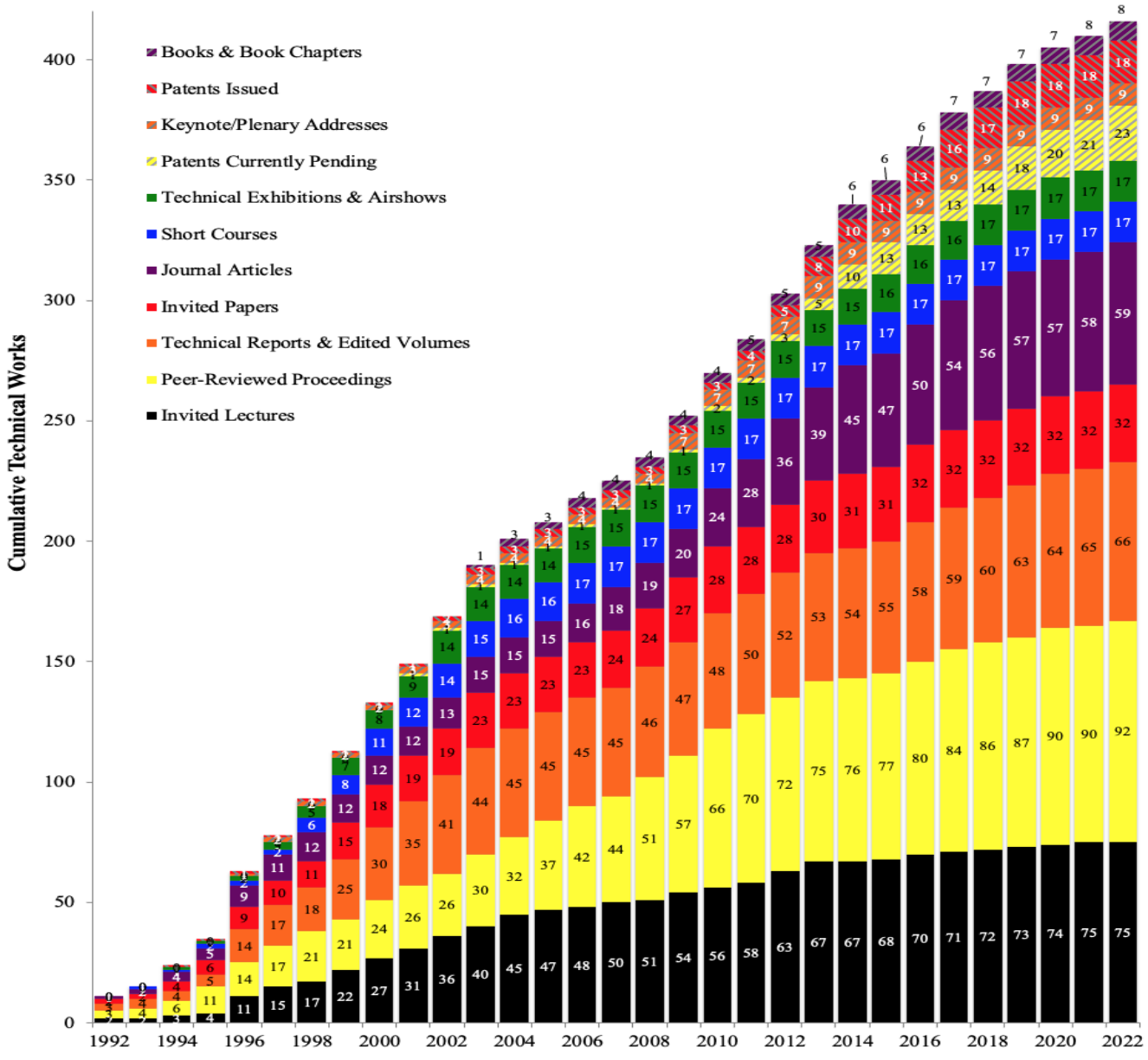
15 Shuler, A., and Barrett, R., "Flight Demonstration of ArcFlex Weapon System Elevon Flight Control Surface," Ft. Sill, OK, 16 December 2013.

16 Barrett, R. and Honea, R., "Flight Demonstration of the XQ-139 QuadRocket Family of Aircraft," Aerospace Industries Association (AIA), Senate Aerospace Caucus Prototyping Reception, Hart Senate Office Building, 20 October 2015.

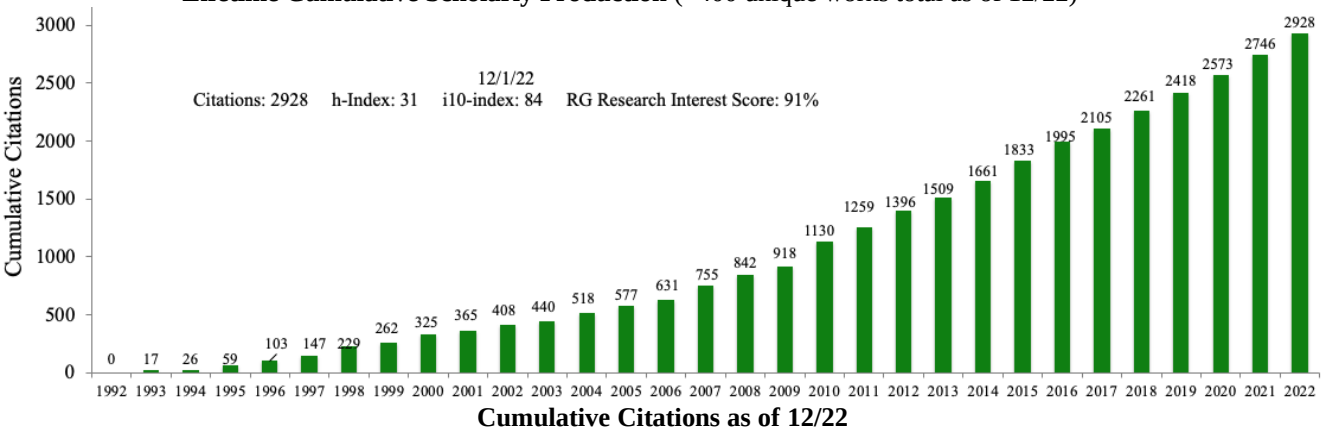
17 Barrett, R., "Demonstration of µAMA Flight Control Actuators for Hard-Launch Munitions," Picatinny Arsenal, NJ, 14 November 2016.

3. PROFESSIONAL PUBLICATIONS AND CREATIVE WORKS

3.1 OVERVIEW OF RESEARCH PUBLICATIONS AND CREATIVE WORKS



Lifetime Cumulative Scholarly Production (>400 unique works total as of 12/22)



Cumulative Citations as of 12/22

3.2 MAJOR PUBLICATIONS OR CREATIVE WORKS

3.2.1 SELECTED BOOKS AND BOOK CHAPTERS

1. Barrett, R., "Convertible UAV Design, Modeling and Development," companion book to the short course presented through Singapore Technologies Aerospace Corporation, Paya Lebar, Singapore 21 July 2003 328 pp.
2. Melkert, J. (ed.), Barrett, R., Bergsma, O, Kamp, A., Reith, B., Saunders-Smits, G., Vermeeren, C. and Zandbergen, B., "Delft Aerospace Design Projects," published by B.V. Uitgeversbedrijf Het Goede Boek, Huizen, Netherlands, 2004, 152pp. (One chapter per author outside of the editor ~12.5%.)
3. Barrett, R., "Adaptive Aerostructures for Missiles, Munitions and UAVs," short course taught to engineers from the Naval Surface Warfare Center, Dahlgren, Virginia December 2004.
4. Barrett, R., "Introduction to Adaptive Aerostructures," companion book to the short courses presented through the University of Kansas Continuing Education Department, Lawrence, Kansas 1998, 2000, 2002, 2005, 207-328 pp.
5. Barrett, R., "Chapter 1 Adaptive Fight Control Actuators and Mechanisms for Missiles, Munitions and Uninhabited Aerial Vehicles (UAVs)," Advances in Flight Control Systems, Edited by Agneta Balint, ISBN 978-953-307-218-0, Hard cover, 296 pages, InTech Publishing, April 11, 2011.
6. Barrett, R., Bennett C., Matamoros, A. and Rolfe, S., "Rehabilitation of Metallic Civil Infrastructure using Fiber-reinforced Polymer (FRP) Composites, Chapter 11 Extending the fatigue life of steel bridges using fiber-reinforced polymer (FRP)," Part 3, pp. 269 - 320, Woodhead Publishing, Cambridge, UK, ISBN: 978-0-85709-653-1, 2014.
7. Barrett, R. (2017). Hybrid Aircraft Aerodynamics and Aerodynamic Design Considerations of Hover-to-Dash Convertible UAVs. In Advanced UAV Aerodynamics, Flight Stability and Control: Novel Concepts, Theory and Applications (pp. pp. 423-446). New York, NY: John Wiley & Sons, Inc.. http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118928687.html http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118928687.html ISBN: 978-1-118-92868-4, 5 May 2017 (Refereed, Invited)
8. Barrett, R.M., Advising Editor, "How It's Built, Rocket," Children's Press, an Imprint of Scholastic, Inc., July 2021.

Nota Bene: The following works are cataloged chronologically.
As of 12/31/17 351 distinct professional works have been produced by R. Barrett-Gonzalez.
Because many invited lectures are also associated with invited conference papers and journal articles, every effort is made to avoid double-counting. Accordingly, the reader is encouraged to note that the RHS of the sections carefully tracks each category numerically. A full chronological Excel file of all 336 works is available upon request.

The following superscripts describe the contributions of R. Barrett for each work:

1. Principal author, responsible for idea generation and research design, data analysis, completion of first draft of the manuscript; collected and analyzed the data, wrote the first draft of the results section, others only advisory;
2. Major author, responsible for idea generation, research design, data analysis, first draft of manuscript, others contributed much less;
3. Major author, responsible for idea generation, wrote one or more sections others contributed similar amounts;
4. Minor author, responsible for idea generation and oversight others contributed the bulk of the technical data and writing;
5. Low input, mostly limited to idea generation, contribution to Introduction section and proof-reading.
6. Publication of others describing, detailing, reporting work done by R. Barrett-Gonzalez & co-investigators

3.2.2 REFEREED JOURNAL ARTICLES (EXCLUDING THE JOURNALS OF THE USPTO & EPO)

1. Barrett, R., "Active Plate and Missile Wing Development Using EDAP Elements," Journal of Smart Materials and Structures, Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 1, ISSN 0964-1726, September 1992, pp. 214-226.
2. Barrett, R., "Aeroservoelastic DAP Missile Fin Development," Journal of Smart Materials and Structures, Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 2, No. 2, ISSN 0964-1726, September 1993, pp. 55-64.
3. Barrett, R., "Active Plate and Missile Wing Development Using Directionally Attached Piezoelectric Elements," AIAA Journal, Volume 32, No. 3, March, 1994, pp. 601 - 609.
4. Barrett, R., "Method and Apparatus for Sensing and Actuating in a Desired Direction," US Utility Patent No. 5,440,192, Journal of the US Patent and Trademark Office, Patent Gazette, Issued 8 August 1994. (Licensed)

5. Barrett, R., "All-Moving Active Aerodynamic Surface Research," Journal of Smart Materials and Structures, Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 4, No. 4, June 1995, pp. 65 - 73. Also proceeding article and invited paper.
6. Barrett, R., and Farokhi, S., "Subsonic Aerodynamics and Performance of a Smart Vortex Generator System," AIAA Journal of Aircraft, Volume 33, No. 2 March - April, 1996, pp. 393 - 398.
7. Barrett, R. and Brozoski, F., "Missile Flight Control using Active Flexspar Actuators," Journal of Smart Materials and Structures, Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 5, No. 2, March 1996, pp. 121 - 128.
8. Barrett, R., and Gross, R. S., "Super-Active Shape Memory Alloy Composites," Journal of Smart Materials and Structures, Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 5, No. 3, June 1996, pp. 255 - 260.
9. Barrett, R., "Active Aeroelastic Tailoring of an Adaptive Flexspar Stabilator," Journal of Smart Materials and Structures, Vol. 5, No. 6 December 1996, Techno House, Bristol, UK, 1996, pp. 723 - 730.
10. Barrett, R., Brozoski, F., and Gross, R. S., "Design and Testing of a Subsonic All-Moving Adaptive Flight Control Surface," AIAA Journal, published by the American Institute of Aeronautics and Astronautics, Reston, VA, Volume 35, No. 7, July 1997, pp. 1217 - 1219.
11. Barrett, R. and Stutts, J., "Design and Testing of a 1/12th Scale Solid State Adaptive Rotor," Journal of Smart Materials and Structures, Vol. 6, No. 4 August 1997, Techno House, Bristol, UK, 1997, pp. 491 - 497. Featured technical paper for IOP Publishing, Fall 1997, http://www.iop.org.
12. Barrett, R., and Frye, P., and Schliesman, M., "Design, Construction and Characterization of a Flightworthy Piezoelectric Solid State Adaptive Rotor," Journal of Smart Materials and Structures Vol. 7, No. 3, June 1998, pp. 422 – 431.
13. Barrett, R., "Auburn University's Aerospace Engineering Program, Adaptive Aerostructures Research," American Institute of Aeronautics and Astronautics Student Journal, Vol. 39, no. 2, Summer Issue, June 2001, pages 4 – 13.
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The following publication is my single most important as it represents conception, reduction to practice, analytical and computational modeling, wind tunnel testing, flight testing, live fire range testing, demos for the US DoD, flight demonstrations at some of the world's largest airshows, licensing, transition to industry and subsequent support of serial production and employment of both development and production staffs. Seven figures in IP royalties were generated with $14M in RDT&E funds being expended between research facilities in Singapore and Auburn University. More than a decade after first flight, the aircraft still claims the greatest hover endurance, range, useful load and dash speed of any OAV class aircraft:

Barrett, R., "Convertible Vertical Take-Off and Landing Miniature Aerial Vehicle," US Utility Patent 6,502,787, issued 22 February 2002. (Licensed)

The world's first patent on an adaptive aerostructure is centered on making isotropic actuator materials behave as if they are highly orthotropic. By doing so, it became possible to directly twist aerostructures and their substrates. Conceived in 1989, reduced to practice, modeled, tested and transitioned to industry in 1990, the following patent generated six-figures in IP royalties for the University of Maryland. The patent describes the basic technology which went into prototype fins, wings and the longitudinal and lateral cyclic flight control systems of the world's first rotorcraft to take to the air using piezoelectric actuators in its *solid state adaptive rotor*. The work and aircraft associated with this invention lead directly to capturing Discover Magazine's *Discover Award* for aerospace technology:

Barrett, R., "Method and Apparatus for Sensing and Actuating in a Desired Direction," US Utility Patent No. 5,440,192. Issued 8 August 1994. (Licensed)

One of the latest flight control devices to be licensed to major aerospace companies dramatically enhances flight control surface deflections for negligible weight gain and no loss in blocked forces and moments. As one of the first applications of near-buckled low net passive stiffness actuators, this device has generated six figures in IP royalties and has been licensed to three aerospace companies.

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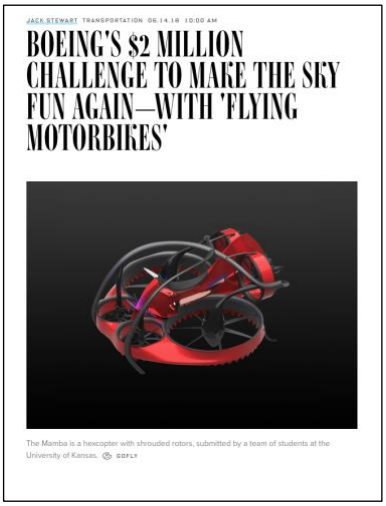
JACK STEWART TRANSPORTATION 06.14.18 10:00 AM

BOEING'S $2 MILLION CHALLENGE TO MAKE THE SKY FUN AGAIN—WITH 'FLYING MOTORBIKES'

The Mamba is a hexcopter with shrouded rotors, submitted by a team of students at the University of Kansas. GOFLY

with

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Popular Mechanics FEBRUARY 1992

TECH UPDATE

News Of Tomorrow's Technology Today

Future Ships Could Swim Like Fish

LAWRENCE, KS—Fish have known it for 400 million years: The easiest way to slice through water is to flap a tail. Now man is catching up. Seeking efficiency and stealth for marine craft, engineers are looking seriously at fishtail propulsion.

At the University of Kansas, Ronald Barrett has already demonstrated a 9-in. proof-of-concept vehicle. Wiggling at a frequency of 22 swipes per second, a submerged tail drives the little model at 0.6 knots. The motion comes from piezoelectric ceramic strips, which expand and contract in response to an alternating current. Lined up at 45° angles along the tail's sides, the strips can be triggered independently to control pitch, yaw and roll.

Barrett sees two major applications for what he calls solid-state aquatic vehicles. Navies could exploit noiseless propulsion and fishlike behavior to have small underwater robots sneak up on hostile ships. Surface vessels could take advantage of the drag-reducing eddies touched off by the oscillating tail, for a big boost in efficiency over conventional screws. Sealed up, a 100-ft. tail could push a ship at 30 knots.

Meanwhile, Massachusetts Institute of Technology engineer Michael Triantafyl-lou is already designing a 5-ft. robot sub with a tail that is driven by hydraulically activated pulleys.

Twin piezoelectric fishtails, oscillating out of phase to minimize yaw, could drive future tanker.

Highlights This Month

■ **Water Bearer**—Floating aqueduct could slake California drought.
■ **Weather Eyes**—Planes' new sensors spot wind and see through storms.
■ **Grand Slam**—Army's superdoor is faster than a speeding bullet.
■ **Jets Strip Jets**—Water guns peel paint from aircraft.
■ **Shot From The Blue**—Huge gun to launch payloads from barge.
■ **Armed Forces**—Robot limbs evolve for strength and grace.

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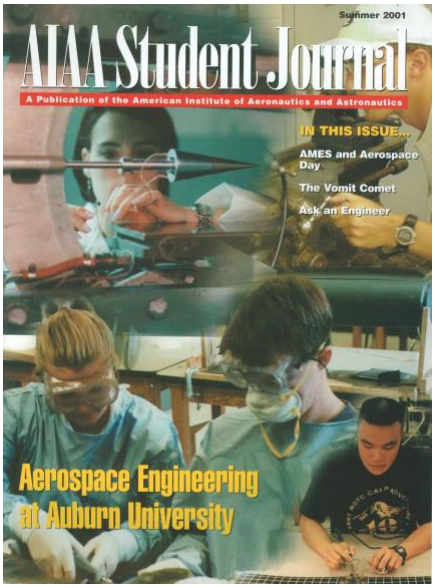

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3.4 SCHOLARLY PRESENTATIONS

3.4.1 INVITED LECTURES

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10. Barrett, R., "Adaptive Aerostructures, The Coming Revolution in Aircraft Flight Control, invited colloquium at The University of Florida School of Engineering, Gainesville, FL 25 October 1996.
11. Barrett, R., Frye, P, and Schliesman, M., Design, Development and Testing of a Solid State Adaptive Rotor, invited paper presented at the Indian Institute of Science, Bangalore, India 11 - 14 December, 1996. Keynote Address delivered at the Society of Photo-Optical Instrumentation Engineers First Annual Far East and Pacific Rim Conference on Smart Materials and Structures, and Micro-Electromechanical Machines, Bangalore, India, 11 - 14 December 1996.

12. Barrett, R., "Adaptive Aerostructures -- Challenges for the 21st Century," invited position paper and lecture presented at the Engineering and Physical Sciences Research Council and the Institution of Mechanical Engineers First World Expert Meeting on Smart Structures, Sheffield, England, 23 - 25 February, 1997.
13. Barrett, R., "Barrel-Launched Micro Aerial Vehicles: Challenges, Designs and Opportunities," invited lecture at the Micro Air Vehicle Applications to Indigenous Targeting for Missile and Cannon Launch Platforms workshop, Aberdeen Proving Ground, Aberdeen, MD 22 April 1997.
14. Barrett, R., Adaptive Materials and Adaptive Aerostructures Keynote/Invited Lecture delivered at the 1st European Aerospace Propulsion Conference, London, United Kingdom 8 - 9 December 1997.
15. Barrett, R., "The Solid State Adaptive Helicopter Rotor, Configurations, Design and Performance," 21st International Center for Actuators and Transducers, Smart Actuator Symposium, The Pennsylvania State University, 24 April 1997.
16. Barrett, R., "Adaptive Materials and Aerostructures in Engine Construction," Invited lecture delivered at the Aerospace Propulsion Conference, produced by H. Silver and Associates, London, UK 8 - 9 December 1997.
17. Barrett, R., "Adaptive Aerostructures -- the Coming Revolution in Aircraft Flight Control," Invited Lecture delivered at Sowerby Research Center, British Aerospace Corporation, Bristol, United Kingdom, 27 August 1997.
18. Barrett, R., "Recent Advances in Adaptive Aerostructures: Designing for Flight Control," invited paper, lecture and demonstrations at the 1st European Workshop on Smart Systems, Demonstrators, Concepts and Applications, Harrogate, UK, 6 - 8 July 1998.
19. Barrett, R., "Adaptive Aerostructures - the Coming Revolution in Aircraft Flight Control," Invited Lecture delivered at the School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, 22 October 1998.
20. Barrett, R., "Adaptive Aerostructures," invited technical lecture at the Tri-State Engineering Socities Meeting, The Engineering Societies of Alabama, Louisiana and Mississippi, Sandestin, FL 20 - 23 June 1999.
21. Barrett, R., "Adaptive Munition Design, Development and Testing," invited paper delivered at the Future Challenges in Precision Munitions Actuators and Power Technical Directors Conference, Picatinny Arsenal, NJ, 18 August 1999.
22. Barrett, R., "Range Extended Adaptive Munition Design, Development and Testing," invited paper presented to DARPA program manager Dr. Rich Wlezien, DARPA Headquarters, Arlington, VA, 31 August 1999.
23. Barrett, R., "Urban Micro Aerial Vehicle Design, Fabrication and Testing," invited lecture delivered to DARPA program manager Dr. Sam Wilson, DARPA Headquarters, Arlington, VA 23 September 1999.
24. Barrett, R., "Urban Micro Aerial Vehicle Design, Performance and Testing," invited paper presented at the 1st MAV PI Meeting, MacDill AFB, FL, 2 December 1999.
25. Barrett, R., "Range Extended Adaptive Munition Design," invited paper presented to US Army Personnel, Picatinny Arsenal, NJ 2 May 2000.
26. Barrett, R., "The Future of Combat – Guided Bullets and Micro Aerial Vehicles," briefing to the US Army Deputy Undersecretary of Defense for Acquisition and Logistics, 12 June 2000.
27. Barrett, R., "LuMAV-3A The World's Smallest Rotary-Wing UAV, Design, Fabrication, Flight Test and Performance,"invited presentation delivered to the US Marine Corps, Army, Navy, Air Force and DARPA personnel to accompany the final flight demonstration of the program, 17 September 2000.
28. Barrett, R., "Range Extended Adaptive Munition Design," invited paper presented to US Army Personnel, Picatinny Arsenal, NJ 28 September 2000.
29. Barrett, R. and Lee, G., "Design Criteria, Aircraft Design, Fabrication and Testing of Sub-Canopy and Urban Micro-Aerial Vehicles," proceedings of the AIAA/AHS International Powered Lift Conference, Alexandria, Virginia, 1 November 2000.

30. Barrett, R., "Recent Advances in Adaptive Aerostructures for UAVs," Keynote Lecture at AeroIndia 2001, Yelahanka Air Force Base, India, 9 February 2001.
31. Barrett, R., "Range-Extended Adaptive Munition, Opportunities for the Hit-to-Kill (HTK) Mission," invited presentation to Dr. Mike Mattice of DARPA ATO and the HTK Working Group, Alexandria, VA, 18 April 2001.
32. Barrett, R., "Design Criteria and Future Potential for Urban Mini Aerial Vehicles," invited presentation delivered to Singapore Technologies Dynamics, 11 – 12 July 2001, Singapore.
33. Barrett, R., "Adaptive Aerostructures Demonstrators – Hover through Hypersonic," Invited Lecture and demonstrators displayed for the technical community at the 4th European Demonstrators Conference, 10 – 15 December 2001, Edinburgh, Scotland.
34. Barrett, R., "Recent Advanced in Rotary and Fixed-Wing Uninhabited Aerial Vehicle Flight Control through Adaptive Aerostructures," invited presentation at the 35th International Center for Actuator Technology, Pennsylvania State University, University Park, Pennsylvania, 19 April 2002.
35. Barrett, R., "Range-Extended Adaptive Munition, Opportunities for the Hit-to-Kill (HTK) Mission," invited presentation to Dr. Mike Mattice of DARPA ATO and the HTK Working Group, Alexandria, VA, 13 May 2002.
36. Barrett, R., "UAV Design, Fabrication and Testing Capabilities in Auburn University's Adaptive Aerostructures Laboratory," Presentation to Lutronix Corporation, Del Mar, California 15 June 2002.
37. Barrett, R., "Advanced Adaptive Aerostructures for UAVs," invited lecture delivered to the Royal Military Academy of Belgium, 22 July 2002.
38. Barrett, R., "Advanced Adaptive Aerostructures for UAVs," invited lecture delivered to the Faculty of Aerospace Engineering, Technical University of Delft, Netherlands, 28 July 2002.
39. Barrett, R.M., "Developmental History of a New Family of Subscale, Convertible, High Performance UAVs," invited paper and lecture made at the Micro Aerial Vehicles -- Unmet Technological requirements workshop and conference, Schloß Elmau, Germany 22 - 24 September 2003.
40. Barrett, R.M., "New Designs for Convertible Subscale Adaptive UAVs and Supersonic MAVs," Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.
41. Barrett, R.M., "Subscale Aircraft Design Evolution with Adaptive Materials from High Performance VTOL MAVs through Convertible UAVs," Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.
42. Barrett, R.M., "Enabling Configurations and Adaptive Aerostructures for High Performance, Urban and Sub-Canopy MAVs," Novel Aircraft Designs Concepts for the 21st Century Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.
43. Barrett, R., "Advanced Flexspar Actuator System," Invited Lecture, to Singapore Technologies Aerospace Corporation, Jalan Boon Lay, Singapore 3 January 2004.
44. Barrett, R., "Introduction to Adaptive Aerostructures with Practicum," Short Course and Practicum, Singapore Technologies Aerospace Corporation, ST Kinetics, ST Dynamics Jalan Boon Lay, Singapore 4 - 7 January 2004.
45. Barrett, R., "UAV Research, Development Unique Supporting Capabilities and Technologies," invited briefing to USARMY MICOM, Hunstsville, AL 25 January 2004.
46. Barrett, R., "Guided Bullet Sniper Weapon," Invited Presentation to DARPA ATO Office Manager, John Allen, Defense Advanced Research Projects Agency, Arlington, VA 25 August 2004.
47. Barrett, R., "Advanced Adaptive Flight Control Actuators for Hypersonic Munitions," Invited Presentation, delivered at Nielsen Engineering and Research (NEAR) and the Naval Surface Warfare Center, MountainView, California, 7 September 2004.

48. Barrett, R., "National Geographic Television Channel Special 'Bullets,'" Invited Presentation and Documentary, filmed 25, 26 April 2005, first aired Sunday 18 September 2004.
49. Barrett, R., "Update on Selected Adaptive Aerostructures Topics, Programs & Technology," Invited Presentation., AFRL/MN, Eglin AFB, FL, 1 June 2005
50. Barrett, R., "Adaptive Wing Technology," Invited Lecture, Demonstrations and Program Summary, Boeing Phantom Works, Renton, Washington, 8 June 2006.
51. Barrett, R., "Adaptive Materials, Revolutionizing Aircraft Structures," Invited Lecture at the Royal Military Academy of Belgium, Brussels, Belgium, 10 February 2007.
52. Barrett, R., "Adaptive Aerostructures, An Overview," Invited Lecture at the Vrije Universiteit Brussel, Mechanics of Engineering Materials Department 13 February 2007.
53. Barrett, R., "Adaptive Aerostructures for Military Applications," Invited Lecture at the Royal Military Academy of Belgium, Sponsored by the Department of Ordnance Development, 28 March 2007.
54. Barrett, R., (Invited Lecture) "Gluhareff Pressure Jet Engine: Past, Present and Future," invited, sponsored lecture at the US Air Force Research Lab (AFRL), Arnold Engineering and Development Center (AEDC), Tennessee, 20 March 2008.
55. Barrett, R., "Adaptive Materials and Aerostructures: Revolutionizing Aerospace Systems," Keynote Lecture at AeroIndia 2009, Yelahanka Air Force Base, India 12 February 2009.
56. Barrett, R., "Adaptive materials and aerostructures: revolutionizing uninhabited aerospace systems," (Invited Paper) Second International Conference on Smart Materials and Nanotechnology in Engineering, Proceedings Vol. 7493, Weihai, China, 8 - 11 July 2009.
57. Barrett, R., "Acoustic Vector Sensing for UAV/UAS Airborne Sense and Avoid," presentation to US Department of Justice, Office of Justice Programs, Washington, DC, 29 March 2010.
58. Barrett, R., "Tethered Hovering Platform for Law Enforcement," presentation to US Department of Justice, Office of Justice Programs, Washington, DC, 29 March 2010.
59. Barrett, R., "Billions to be $aved, Reducing USAF Legacy Fleet Aircraft Fuel Consumption," Invited Lecture presented to AMC Commander, General Vern Findley and AMC Chief Scientist Dr. Don Erbschloe Scott AFB, Illinois 28 February 2011. (Invited)
60. Barrett, R., Honea, R. (TRI Director), Bowers, A. (NASA Dryden Dep. Tech. Director), Voracek, D. (NASA Dryden Chief Technologist), Fisher, S. (President, Ikhana Corp.), White, E. (Director, Boeing Integrated Defense Systems), Anemaat, W. (President, DAR Corp.), and Roskam, J. (Emeritus Distinguished Professor), "Adaptive Aerostructures for Air Mobility Fleet Fuel Efficiency Enhancement," Invited Lecture and Juried Research Proposal presented to USAF Chief Scientist, Dr. Kevin Geiss, AMC Commander, General Vern Findley, AMC Chief Scientist Dr. Don Erbschloe and AFRL Fuel Efficiency Science Advisory Board, Scott AFB, Illinois 29 June 2011. (Invited)
61. Barrett, R., Honea, R., and Denning, M. and Cranking, P., "Supra-Hovering Armed Force Terminators (SHAFT)," invited presentation delivered to the US Special Operations Command, MacDill Air Force Base, FL 30 March 2012.
62. Barrett, R., Honea, R., "Adaptive Aerostructures for USAF Fleet Fuel Efficiency Enhancement," invited presentation delivered to the Undersecretary of the US Air Force for Fuel Efficiency, Dr. Kevin Geiss, The Pentagon, Virginia, 5 April 2012.
63. Barrett, R., Honea, R., "Adaptive Aerostructures for USAF Fleet Fuel Efficiency Enhancement," invited presentation delivered to the Deputy Director for Innovation, Mr. John Jennings, The Pentagon, Virginia 23 October 2012.
64. Barrett, R., Honea, R., and White, E., "Adaptive Aerostructures for USAF Aircraft Fuel Efficiency Enhancement," invited presentation delivered to the USAF Research Lab, Wright-Patterson Air Force Base, Dayton, Ohio, 16 November 2012.

65. Barrett, R., Honea, R., and White, E., "Near-Term Fuel Efficiency Enhancement of the B-52 Fleet using Smart Aerostructures," invited presentation delivered to the USAF Chief Scientist of Global Strike Command, 18 December 2012.
66. Barrett, R. and Barrett, C., " Biomimetic FAA-Certifiable, Artificial Muscle Structures for Commercial Aircraft Wings," Invited Lecture and Presentation at the 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (BAMN2013), Jeju Island, South Korea, 26 - 30 August 2013.
67. Barrett, R., and Barrett C., " Revolutionary Adaptive Aerostructures, Changing Flight via Nature's Analogs for Dramatic Fuel Savings," 1st international Conference and Exhibition on Mechanical and Aerospace Engineering, San Antonio, Texas, 30 September – 2 October 2013.
68. Barrett, R., "FAR 23/25 Certifiable Adaptive Structures: Enabling High CLmax and Inherent Gust Rejection via Mother Nature's Example," Invited Presentation to Wichita Section of the AIAA, Wichita, Kansas, 6 November 2013.
69. Shuler, A., and Barrett, R., "Flight Demonstration of ArcFlex Weapon System Elevon Flight Control Surface," Ft. Sill, OK, 16 December 2013.
70. Barrett, R. (2015). Statistical Time and Market Predictive Engineering Design (STAMPED) Techniques for Preliminary Aircraft Sizing, CEAS2015-206. In 5th Annual Challenges in European Airspace Conference (CEAS) Conference, Delft, Holland. (Refereed) 7-11 Sept 2015
71. Barrett, R. (2016). THERMALLY ADAPTIVE BUILDING COVERINGS INSPIRED BY BOTANICAL THERMOTROPISM. In Proceedings of the ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS) (pp. SMASIS2016-9105). Washington, D.C.: American Society of Mechanical Engineers. http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=2589293 September (Refereed) 18 - 20, 2016.
72. Barrett, R. (2016). THERMALLY ADAPTIVE BUILDING COVERINGS: THEORY AND APPLICATION. In Proceedings of the ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS) (pp. SMASIS2016-9014). Washington, D.C.: American Society of Mechanical Engineers. http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=2589286 (Refereed) September 18 - 20, 2016.
73. Barrett, R., and Schumacher, L., "Adaptive Munitions and Convertible Weapons, Historical Overview, Army/DARPA Projects and Implications for Aerial Gunnery," presented at the USAF Munitions Directorate, AFRL/MN, 23 March 2017.
74. Barrett, R. M. (2018, January 31). "The XQ-138 and -139 Families of Convertible UAVs: Fast, Maneuverable and Durable for CUAS Missions,". US Special Forces Command, USSOCOM, ThunderDrone RPE II: Counter-Small Uninhabited Aerial Systems,, Tampa, Florida, Supported SOCOM's counterdrone efforts with display and flight demonstrations.
75. Barrett, R. M., & Schumacher, L. (2018, August 10). "Demonstration of AAA and the LCAAPS Program,". Private lecture to Boeing St. Louis personnel, St. Louis, MO. Invited lecture to multiple Boeing design professionals on utility of AAA for their LCAAPS program.
76. Barrett, R. M. (2018, November 2). Novel Aircraft Configurations: Hover-to-Dash UAVs, Flying Snitches, World's Fastest Quadcopter and the Boeing GoFly Flying Motorcycle, University of Missouri Kansas City Distinguished Lecture Series, UMKC Campus, Kansas City, MO.
77. Barrett, R. M. (2019, March 18). Statistical Time and Market Predictive Engineering Design (STAMPED) Techniques: A Useful Tool for Determining Model Fidelity of Future Products. Industry, Engineering & Management Systems Conference 2019, Clearwater, FL.

3.4.2 KEYNOTE LECTURES

1. Barrett, R., Frye, P, and Schliesman, M., Design, Development and Testing of a Solid State Adaptive Rotor, invited paper presented at the Indian Institute of Science, Bangalore, India 11 - 14 December, 1996. Keynote

Address delivered at the Society of Photo-Optical Instrumentation Engineers First Annual Far East and Pacific Rim Conference on Smart Materials and Structures, and Micro-Electromechanical Machines, Bangalore, India, 11 - 14 December 1996.

2. Barrett, R., Adaptive Materials and Adaptive Aerostructures Keynote/Invited Lecture delivered at the 1st European Aerospace Propulsion Conference, London, United Kingdom 8 - 9 December 1997.
3. Barrett, R., "Recent Advances in Adaptive Aerostructures for UAVs," Keynote Lecture at AeroIndia 2001, Yelahanka Air Force Base, India, 9 February 2001.
4. Barrett, R.M., "Adaptive Aerostructures, Revolutionizing Aircraft and Weapon Designs," inaugural address to the Faculty of the Technical University of Delft, 3 September 2003, Delft, Netherlands.
5. Barrett, R., "Adaptive Materials and Aerostructures: Revolutionizing Aerospace Systems," Keynote Lecture at AeroIndia 2009, Yelahanka Air Force Base, India 12 February 2009.
6. Barrett, R., "Adaptive materials and aerostructures: revolutionizing uninhabited aerospace systems," (Invited Paper) Second International Conference on Smart Materials and Nanotechnology in Engineering, Proceedings Vol. 7493, Weihai, China, 8 - 11 July 2009.
7. Barrett, R. and Barrett, C., " Biomimetic FAA-Certifiable, Artificial Muscle Structures for Commercial Aircraft Wings," Invited Lecture and Presentation at the 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (BAMN2013), Jeju Island, South Korea, 26 - 30 August 2013.
8. Barrett, R., and Barrett C., " Revolutionary Adaptive Aerostructures, Changing Flight via Nature's Analogs for Dramatic Fuel Savings," 1st international Conference and Exhibition on Mechanical and Aerospace Engineering, San Antonio, Texas, 30 September – 2 October 2013.
9. Sinn, T., & Ronald, B. (2015). Design, Manufacturing and Test of a High Lift Secondary Flight Control Surface with Shape Memory Alloy Post-Buckled Precompressed Actuators. Actuators, 4(3), 156 - 171. http://www.mdpi.com/2076-0825/4/3/156 doi:doi:10.3390/act4030156 (Refereed, Invited) (28 July 2015)

3.4.3 SELECTED SHORT COURSES

1 Barrett, R., "Advanced Manufacturing Techniques for Smart Materials," short course taught as part of the Smart Materials and Systems Conference, San Diego, California, January 21-22, 1993, sponsored by the International Institute for Research, New York, NY.

2 Barrett, R., "Introduction to Basic Aerodynamics," Eisenhower Program instructor for high school teachers, Short Course, 31 July - 4 August 1995

3 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught as part of the University of Kansas Continuing Education Series, Lawrence, Kansas 10 - 12 August 1998.

4 Barrett, R., Gross, R. S., "Adaptive Stabilization and Flight Control Surface Research for Compressed Carriage," Phase II Report to McDonnell Douglas Aerospace Corporation and the USAF Armament Directorate, WL/MNAV, Eglin AFB, Florida 31 August 1998.

5 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught for H. Silver and Associates, Ltd. London, England 14 - 15 September 1998

6 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught at the Institut für Statik und Dynamik der Luft-und Raumfahrtkonstruktionen, Stuttgart, Germany 1 - 2 October 1998

7 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught at the Institut für Statik und Dynamik der Luft-und Raumfahrtkonstruktionen, Stuttgart, Germany 26 - 28 July 1999.

8 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught as part of the University of Kansas Continuing Education Series, Lawrence, Kansas 9 - 10 August 1999.

9 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught at Saab Dynamics, AB, Linköping, Sweden 7 - 10 February 2000.

10 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught as part of the University of Kansas Continuing Education Series, Lawrence, Kansas 23 - 24 March 2000

11 Barrett, R., "An Introduction to Adaptive Aerostructures and Munitions," short course taught to US Army Engineers, Picatinny Arsenal, NJ, 13 – 16 June 2000.

12 Barrett, R., "An Introduction to Adaptive Aerostructures and Munitions," short course taught to US Army Engineers, Picatinny Arsenal, NJ, 25 – 28 September 2000.

13 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught to Government of India Engineers and Program Managers, Yelahanka Air Force Base, Bangalore India, 12 – 13 February 2001.

14 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught at the Faculty of Aerospace Engineering, Delft, Netherlands, 24 – 25 March 2002.

15 Barrett, R., "An Introduction to Adaptive Aerostructures," short course taught to the Boeing Company's Wing Structures Groups, 737, 747, 757, 767 and 777 and the Phantom Works engineers, Renton, Washington, 19 – 20 August 2002.

16 Barrett, R., "Convertible UAV Design, Modeling and Development," short course taught to Singapore Technologies Aerospace, Ltd. engineers, 12 August 2003.

17 Barrett, R., "Introduction to Adaptive Aerostructures with Practicum," Short Course and Practicum, Singapore Technologies Aerospace Corporation, ST Kinetics, ST Dynamics Jalan Boon Lay, Singapore 4 - 7 January 2004.

18 Barrett, R., "Introduction to Adaptive Aerostructures," companion book to the short courses presented through the University of Kansas Continuing Education Department, Lawrence, Kansas 1998, 2000, 2002, 2005, 207-328 pp.

3.4.3 INVITED EXPERT PANELIST READINGS

1. Defense Advanced Research Projects Agency and the US Army Research Laboratory Micro Air Vehicle (MAV) Applications to Indigenous Targeting for Missile and Cannon Launch Platforms Invitational Workshop, Aberdeen Proving Ground, MD 22 - 23 April 1997.
2. Engineering and Physical Sciences Research Council and International Society of Mechanical Engineers 1st World Expert Meeting on Smart Structures, Loch Lomond, Scotland, 23 - 25 February 1997. *An all-expense paid gathering, of the world's top 50 smart structures technologists. Barrett was selected as one of the top US adaptive aerostructures technologists.*
3. 10th VPI&SU Symposium on Structural Dynamics and Control, Blacksburg, VA, May 10, 1994.

3.5 MINOR PRESENTATIONS: SELECTED LECTURES

1. Barrett, R., "Pressurized Composite Structural Tubes," Third Prize Winner at the American Institute of Aeronautics and Astronautics Region V Conference, Saint Louis, MO, 14 April 1987.

2. Barrett, R., "A Theoretical and Experimental Investigation of an Efficient Rotor Tip-Jet Propulsion System," Third Prize Winner at the American Institute of Aeronautics and Astronautics Region V Conference, Denver, CO, 15 April 1988.

3. Barrett, R., "Intelligent Rotor Blade Actuation through Directionally Attached Piezoelectric Crystals," National Runner-Up and Winner of the Southeast Region Robert Lichten Award for the Best Technical Paper at the 46th American Helicopter Society National Conference and Forum, Washington, D.C., May, 1990.

4. Barrett, R., "Active Structures Development Using Isotropic Elements to Produce Bending and Twist Deflections in Coupled and Uncoupled Substrates," Proceedings of the AIAA Region V Conference, Ames, IA, April, 1991.

5. Barrett, R., "Actuation Strain Decoupling Through Enhanced Directional Attachment in Plates and Aerodynamic Surfaces," proceedings of the First European Conference on Smart Structures and Materials, Glasgow, Scotland, 12 - 14 May 1992, edited by B. Culshaw, P. T. Gardiner, and A. McDonach, Institute of Physics Publishing, Bristol, UK 1992, pp. 383 - 386.

6. Barrett, R., "Active Composite Torque-Plate Fins for Subsonic Missiles," invited paper presented at the Dynamic Response of Composite Structures conference, New Orleans, LA, August 30 - September 1, 1992.

7. Barrett, R., "Modeling Techniques and Design Principles of a Low Aspect Ratio Active Aeroservoelastic Wing," proceedings of the SPIE 1993 Symposium on Smart Structures and Materials, Albuquerque, NM, 1 - 4 February 1993, published by the SPIE, Bellingham, WA, Vol. 1917, pp. 107 - 118.

8. Barrett, R., "Aeroservoelastic Characteristics of All-Moving Adaptive Flight Control Surfaces," invited paper presented at the 10th VPI&SU Symposium on Structural Dynamics and Control, Blacksburg, VA, May 8 - 10, 1994.

9. Barrett, R., and Farokhi, S., "On the Aerodynamics and Performance of Active Vortex Generators," proceedings of the AIAA 11th Applied Aerodynamics Conference, Monterey, CA, August 9-11, 1993, AIAA paper 93-3446, published by the American Institute of Aeronautics and Astronautics, Washington, D.C., pp. 376 - 386.

10. Barrett, R., "Design and Manufacturing of Adaptive Composites for Active Flight Control Surfaces," proceedings of the 2nd International Conference on Composites Engineering, New Orleans, LA, August 21 - 24, 1994.

11. Barrett, R., Gross, R. S., and Brozoski, F., "Missile Flight Control using Active Flexspar Actuators," proceedings of the SPIE 1995 Symposium on Smart Structures and Materials, San Diego, CA, 26 February - 3 March, 1995, published by the SPIE, Bellingham, WA, Vol. 2443, pp. 52 - 61.

12. Barrett, R., and Gross, R. S., "Super-Active Shape Memory Alloy Composites," proceedings of the SPIE 1995 Symposium on Smart Structures and Materials, San Diego, CA, 26 February - 3 March, 1995, published by the SPIE, Bellingham, WA, Vol. 2441, pp. 110 - 117.

13. Barrett, R., Brozoski, F., and Gross, R. S., "Design and Testing of Subsonic All-Moving Smart Flight Control Surfaces," proceedings of the 36th Structures, Structural Dynamics and Materials Conference, New Orleans, LA, April 10 - 12, 1995, published by the AIAA, Washington, D.C., pp. 2289 - 2296.

14. Barrett, R., "Aeroservoelastic Characteristics of All-Moving Adaptive Flight Control Surfaces," proceedings of the 10th VPI&SU Symposium on Structural Dynamics and Control, Blacksburg, VA, May 8 - 10, 1995, published by VPI, Blacksburg, VA. pp. 215 - 224.

15. Barrett, R., "All-Moving Active Aerodynamic Surface Research," proceedings of the Society of Engineering Science 31st Annual Technical Meeting, Texas A&M University, College Station, TX, October 10-12, 1994, published by the Institute of Physics Publishing, Ltd., Techno House, Bristol, UK, Vol. 4, No. 4, June 1995, pp. 65 - 73.

16. Barrett, R., "Aerospace Smart Structures, Engineering Education and the Coming Revolution," Invited Paper presented at the 34th Aerospace Sciences Meeting and Exhibit, Reno, NV 15 - 18 January 1996.

17. Barrett, R. and Brozoski, F., "Adaptive Flight Control Surfaces, Wings, and Active Aerodynamics," proceedings of the SPIE 1996 Symposium on Smart Structures and Materials, San Diego, CA, 26 - 29 February, 1996, published by the Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, Vol. 2717, pp. 178 - 198. Featured paper in The Active Sound and Vibration Control News, published by Tech Pubs, Inc. Columbia, MD, Vol. 03, No. 4, April, 1996.

18. Barrett, R., "Flight Control Applications of Adaptive Aerostructures," invited lecture and associated technical exhibition adn demonstration at the NASA Langley Research Center Workshop on Enabling Technologies for Smart Aircraft Systems," May 14 - 16, Hampton, VA 1996.

19. Barrett, R., and Cook, G., "The Solid State Adaptive Rotor, Design, Development and Implications for Future Rotorcraft," (Invited) proceedings of the NATO/AGARD Flight Vehicle Integration Panel Symposium on Advances in Rotorcraft Technology, Ottawa, Canada, 27 - 30 May 1996.

20. Barrett, R., "Adaptive Aerostructures, Flight Control Configurations, Performance and Active Projects," invited colloquium at the Ohio State University School of Engineering, Columbus, Ohio 30 May 1996.

21. Barrett, R., "Adaptive Aerostructures, The Coming Revolution in Aircraft Flight Control," invited colloquium at The University of Oklahoma, School of Aerospace and Mechanical Engineering, Norman OK 21 June 1996.

22. Barrett, R., "Adaptive Aerostructures, The Coming Revolution in Aircraft Flight Control," lecture delivered at The Workshop and Conference on Smart Materials, Structures and Systems, Kellog Conference Center Tuskegee University, AL, 1 July 1996.

23. Barrett, R., "Adaptive Aerostructures, The Coming Revolution in Aircraft Flight Control," invited colloquium at Vanderbilt University School of Engineering, Nashville, Tennessee, 26 September 1996.

24. Barrett, R., "Adaptive Aerostructures, The Coming Revolution in Aircraft Flight Control, invited colloquium at The University of Florida School of Engineering, Gainesville, FL 25 October 1996.

25. Barrett, R. and Stutts, J., "Adaptive Composites for Active Flight Control Surfaces," proceedings of the American Society of Mechanical Engineers Winter Annual Meeting, Atlanta, GA 17 - 22 November 1996.

26. Barrett, R., Frye, P, and Schliesman, M., Design, Development and Testing of a Solid State Adaptive Rotor, invited paper presented at the Indian Institute of Science, Bangalore, India 11 - 14 December, 1996. Keynote Address delivered at the Society of Photo-Optical Instrumentation Engineers First Annual Far East and Pacific Rim Conference on Smart Materials and Structures, and Micro-Electromechanical Machines, Bangalore, India, 11 - 14 December 1996.

27. Barrett, R., and Lee, G., "Design, Development and Testing of an Adaptive Flight Control Surface for Micro Aerial Vehicles," 1st International Conference on Emerging Technologies for Micro-Air Vehicles, Georgia Institute of Technology, Atlanta, GA 19 - 20 February 1997.

28. Barrett, R., "Adaptive Aerostructures -- Challenges for the 21st Century," invited position paper and lecture presented at the Engineering and Physical Sciences Research Council and the Institution of Mechanical Engineers First World Expert Meeting on Smart Structures, Sheffield, England, 23 - 25 February, 1997.

29. Barrett, R., and Law, D., "Design Fabrication and Testing of a New Twist-Active Wing Design," proceedings of the 5th Annual Society of Photo-Optical Instrumentation Engineers Symposium on Smart Structures and Materials, San Diego, CA 1 - 5 March 1998.

30. Barrett, R., Frye, P., and Schliesman, M., "Design, Development and Testing of a Solid State Adaptive Rotorcraft," proceedings of the 4th Annual Society of Photo-Optical Instrumentation Engineers Symposium on Smart Structures and Materials, San Diego, CA 3 - 6 March 1997 SPIE paper no. 3041-19, pp. 231 - 242.

31. Barrett, R., and Stutts, J., "Modeling, Design and Testing of a Barrel-Launched Adaptive Munition," proceedings of the 4th Annual Society of Photo-Optical Instrumentation Engineers Symposium on Smart Structures and Materials, San Diego, CA 3 - 6 March 1997, SPIE paper no. 3041 - 49, pp. 578 - 589.

32. Barrett, R., "Barrel-Launched Micro Aerial Vehicles: Challenges, Designs and Opportunities," invited lecture at the Micro Air Vehicle Applications to Indigenous Targeting for Missile and Cannon Launch Platforms workshop, Aberdeen Proving Ground, Aberdeen, MD 22 April 1997.

33. Barrett, R., "The Solid State Adaptive Helicopter Rotor, Configurations, Design and Performance," 21st International Center for Actuators and Transducers, Smart Actuator Symposium, The Pennsylvania State University, 24 April 1997.

34. Barrett, R., "Adaptive Aerostructures -- the Coming Revolution in Aircraft Flight Control," Invited Lecture delivered at Sowerby Research Center, British Aerospace Corporation, Bristol, United Kingdom, 27 August 1997.

35. Barrett, R., Adaptive Materials and Adaptive Aerostructures Keynote/Invited Lecture delivered at the 1st European Aerospace Propulsion Conference, London, United Kingdom 8 - 9 December 1997.

36. Barrett, R., "Adaptive Materials and Aerostructures in Engine Construction," Invited lecture delivered at the Aerospace Propulsion Conference, produced by H. Silver and Associates, London, UK 8 - 9 December 1997.

37. Stutts, J., and Barrett, R., "Development and Experimental Validation of a Barrel-Launched Adaptive Munition," proceedings of the 39th Structures, Structural Dynamics and Materials Conference 20 - 23 April 1998, Long Beach, CA, published by the American Institute of Aeronautics and Astronautics, Washington, D.C. 1998, paper no. AIAA-98-2037.

38. Barrett, R., and Stutts, J., "Development of a Piezoceramic Flight Control Surface Actuator for Highly Compressed Munitions," proceedings of the 39th Structures, Structural Dynamics and Materials Conference 20 - 23 April 1998, Long Beach, CA, published by the American Institute of Aeronautics and Astronautics, Washington, D.C. 1998, paper no. AIAA-98-2033.

39. Clement, J., Brei, D., Moskalik, A., and Barrett, R., "Bench-Top Performance Characterization of a C-Block Driven Active Flap System," proceedings of the 39th Structures, Structural Dynamics and Materials Conference 20 - 23 April 1998, Long Beach, CA, published by the American Institute of Aeronautics and Astronautics, Washington, D.C. 1998, paper no. AIAA-98-2039.

40. Barrett, R., "Recent Advances in Adaptive Aerostructures: Designing for Flight Control," invited paper, lecture and demonstrations at the 1st European Workshop on Smart Systems, Demonstrators, Concepts and Applications, Harrogate, UK, 6 - 8 July 1998.

41. Barrett, R., "Adaptive Aerostructures - the Coming Revolution in Aircraft Flight Control," Invited Lecture delivered at the School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN, 22 October 1998.

42. Barrett, R., "Adaptive Aerostructures," invited technical lecture at the Tri-State Engineering Socities Meeting, The Engineering Societies of Alabama, Louisiana and Mississippi, Sandestin, FL 20 - 23 June 1999.

43. Barrett, R., "Adaptive Munition Design, Development and Testing," invited paper delivered at the Future Challenges in Precision Munitions Actuators and Power Technical Directors Conference, Picatinny Arsenal, NJ, 18 August 1999.

44. Barrett, R., "Range Extended Adaptive Munition Design, Development and Testing," invited paper presented to DARPA program manager Dr. Rich Wlezien, DARPA Headquarters, Arlington, VA, 31 August 1999.

45. Barrett, R., "Urban Micro Aerial Vehicle Design, Fabrication and Testing," invited lecture delivered to DARPA program manager Dr. Sam Wilson, DARPA Headquarters, Arlington, VA 23 September 1999.

46. Barrett, R., "Urban Micro Aerial Vehicle Design, Performance and Testing," invited paper presented at the 1st MAV PI Meeting, MacDill AFB, FL, 2 December 1999.

47. Barrett, R., and Howard, N., "Adaptive Aerostructures for Subscale Aircraft," refereed proceedings of the 20th Southeastern Conference on Theoretical and Applied Mechanics," Pine Mountain, GA, 17 April 2000.

48. Barrett, R., "Range Extended Adaptive Munition Design," invited paper presented to US Army Personnel, Picatinny Arsenal, NJ 2 May 2000.

49. Barrett, R., "Range Extended Adaptive Munition Design," invited paper presented to US Army Personnel, Picatinny Arsenal, NJ 28 September 2000.

50. Barrett, R. and Lee, G., "Design Criteria, Aircraft Design, Fabrication and Testing of Sub-Canopy and Urban Micro-Aerial Vehicles," proceedings of the AIAA/AHS International Powered Lift Conference, Alexandria, Virginia, 1 November 2000.

51. Barrett, R., "Recent Advances in Adaptive Aerostructures for UAVs," Keynote Lecture at AeroIndia 2001, Yelahanka Air Force Base, India, 9 February 2001.

52. Barrett, R., "Rotationally Adaptive Linear Actuator (RALA) Flight Control Surface – Opportunities for flight control of highly compressed munitions," presentation to the Flight Vehicles Branch of Eglin AFB, Florida, 5 March 2001.

53. Barrett, R., Burger, C., and Melian, J. P., "Recent Advances in Uninhabited Aerial Vehicle (UAV) Flight Control with Adaptive Aerostructures," Proceedings of the 4th European Demonstrators Conference, 10 – 15 December 2001, Edinburgh, Scotland.

54. Barrett, R., "Range-Extended Adaptive Munition, Opportunities for the Hit-to-Kill (HTK) Mission," invited presentation to Dr. Mike Mattice of DARPA ATO and the HTK Working Group, Alexandria, VA, 18 April 2001.

55. Barrett, R., "Design Criteria and Future Potential for Urban Mini Aerial Vehicles," invited presentation delivered to Singapore Technologies Dynamics, 11 – 12 July 2001, Singapore.

56. Barrett, R., "Wind Tunnel Testing Techniques for Adaptive Munitions," presentation delivered to the US Army ARDEC, Picatinny Arsenal, NJ 15 – 16 October 2001.

57. Barrett, R., "Adaptive Aerostructures Demonstrators – Hover through Hypersonic," Invited Lecture and demonstrators displayed for the technical community at the 4th European Demonstrators Conference, 10 – 15 December 2001, Edinburgh, Scotland.

58. Barrett, R., "An Overview of the Shipborne Countermeasure Adaptive Munition," Proceedings of the annual Guided Munitions Review meeting, Defense Advanced Research Projects Agency (DARPA), Arlington, VA, 23 April 2002.

59. Barrett, R., "Recent Advanced in Rotary and Fixed-Wing Uninhabited Aerial Vehicle Flight Control through Adaptive Aerostructures," invited presentation at the 35th International Center for Actuator Technology, Pennsylvania State University, University Park, Pennsylvania, 19 April 2002.

60. Barrett, R., "Range-Extended Adaptive Munition, Opportunities for the Hit-to-Kill (HTK) Mission," invited presentation to Dr. Mike Mattice of DARPA ATO and the HTK Working Group, Alexandria, VA, 13 May 2002.

61. Barrett, R., "UAV Design, Fabrication and Testing Capabilities in Auburn University's Adaptive Aerostructures Laboratory," Presentation to Lutronix Corporation, Del Mar, California 15 June 2002.

62. Barrett, R., "Advanced Adaptive Aerostructures for UAVs," invited lecture delivered to the Royal Military Academy of Belgium, 22 July 2002.

63. Barrett, R., "Advanced Adaptive Aerostructures for UAVs," invited lecture delivered to the Faculty of Aerospace Engineering, Technical University of Delft, Netherlands, 28 July 2002.

64. Barrett, R., "Twist-Active Wing Design, Fabrication and Testing," presentation delivered to the USAF Armament Directorate, WL/MNAV, Eglin AFB, FL, 11, 12 November 2002.

65. Barrett, R., "Adaptive Aerostructures – The First Decade of Flight on Uninhabited Aerospace Systems," proceedings of the Society of Photo-Optical Instrumentation Engineers 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, 2 March 2003.

66. Barrett, R., "Design and Testing of Piezoelectric Flight Control Actuators for Hard-Launch Munitions," proceedings of the Society of Photo-Optical Instrumentation Engineers 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, 2 March 2003.

67. Knowles, G., R. Barrett and M. Valentino, "Self-Contained High Authority Control of Miniature Flight Control Systems for Area Dominance," proceedings of the Society of Photo-Optical Instrumentation Engineers 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, 2 March 2003.

68. Barrett, R., "Adaptive Aerostructures: Improving Militarily Enabled, High Performance Subscale UAVs," proceedings of the 12th AIAA/ASME/AHS Adaptive Structures Conference, Palm Springs, California April 2003.

69. Barrett, R.M., "Advanced UAV and Weapon Technology Development at TU Delft," briefing to the UK and Netherlands Ministries of Defense, TU Delft Faculty of Aerospace Engineering, Delft, Netherlands 28 May 2003.

70. Barrett, R.M., "Developmental History of a New Family of Subscale, Convertible, High Performance UAVs," invited paper and lecture made at the Micro Aerial Vehicles -- Unmet Technological requirements workshop and conference, Schloß Elmau, Germany 22 - 24 September 2003.

71. Barrett, R.M., "New Designs for Convertible Subscale Adaptive UAVs and Supersonic MAVs," Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.

72. Barrett, R.M., "Subscale Aircraft Design Evolution with Adaptive Materials from High Performance VTOL MAVs through Convertible UAVs," Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.

73. Barrett, R.M., "Enabling Configurations and Adaptive Aerostructures for High Performance, Urban and Sub-Canopy MAVs," Novel Aircraft Designs Concepts for the 21st Century Invited Paper and Presentation, Advanced Course, Instituto Superior Técnico, Centro de Congressos, Lisbon, Portugal, 20 - 22 October 2003.

74. Barrett, R.M., "Advanced UAV Technologies and New Innovations for Revolutionary Weapons & Counterweapons," Briefing to NATO Defense Attachés at the TU Delft Faculty of Aerospace Engineering, TU Delft, Netherlands, 10 November 2003.

75. Barrett, R., "Advanced Flexspar Actuator System," Invited Lecture, to Singapore Technologies Aerospace Corporation, Jalan Boon Lay, Singapore 3 January 2004.

76. Barrett, R., "Introduction to Adaptive Aerostructures with Practicum," Short Course and Practicum, Singapore Technologies Aerospace Corporation, ST Kinetics, ST Dynamics Jalan Boon Lay, Singapore 4 - 7 January 2004.

77. Barrett, R., "Boeing/USAF MCMAT Kickoff Meeting and Update," presentation delivered to Boeing and USAF managers, Auburn University, Auburn, Alabama, 13 January 2004.

78. Barrett, R., "UAV Research, Development Unique Supporting Capabilities and Technologies," invited briefing to USARMY MICOM, Hunstsville, AL 25 January 2004.

79. Barrett, R., and Lee, G., "Design and testing of piezoelectric flight control actuators for hard-launch munitions," Presented at the 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, 6 - 10 March, 2004, SPIE Paper 5390-52.

80. Barrett, R., "Adaptive aerostructures: the first decade of flight on uninhabited aerial vehicles," Presented at the 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, 6 - 10 March, 2004, SPIE Paper 5388-19.

81. Barrett, R., "Adaptive Aerostructures, Current Update," presentation to the Design and Synthesis Group of the Faculteit Luchtvaart -en Ruimtevaarttechniek, Technische Universiteit Delft, Holland, 12 August 2004.

82. Barrett, R., "Guided Bullet Sniper Weapon," Invited Presentation to DARPA ATO Office Manager, John Allen, Defense Advanced Research Projects Agency, Arlington, VA 25 August 2004.

83. Barrett, R., "Advanced Adaptive Flight Control Actuators for Hypersonic Munitions," Invited Presentation, delivered at Nielsen Engineering and Research (NEAR) and the Naval Surface Warfare Center, MountainView, California, 7 September 2004.

84. Barrett, R., and Romkes, A. "Advanced Composite Design Techniques," presentation to National Science Foundation Manager, Mary Lynn Realff, 1 November 2004.

85. Barrett, R., "Adaptive Materials and Structures: Transfer of Aerospace Technology to Pharmaceutical and Medical Sciences," presentation delivered at the Second Annual Missouri NanoTechnology Alliance, UMKC School of Dentistry, Kansas City, MO 12 November 2004.

86. Barrett, R., "Hybrid Insect-MEMS Systems, Insect Flight Path Control via Adaptive External Manipulation of Sensory Organs," Invited Presentation, DARPA MTO Exploratory Technical Workshop on Hybrid Insect Systems, San Francisco, CA 12 - 13 December 2004.

87. Barrett, R. and Melkert, J., "UAV Visual Signature Suppression via Adaptive Materials," Presented at the 12th Annual International Symposium on Smart Structures and Materials, San Diego, California, 6 - 10 March, 2005, SPIE Paper 5762-14.

88. Barrett, R., Corpening, J. and Reasonover, C., "Airfoil Drag Elimination and Stall Suppression via Piezoelectric Dynamic Tangential Synthetic Jet Actuators," Presented at the 12th Annual International Symposium on Smart Structures and Materials, San Diego, California, 6 - 10 March, 2005, SPIE Paper 5764-19.

89. Barrett, R., McMurtry, R., Vos, R., Tiso, P. and De Breuker, R., "Post-Buckled Precompressed Elements: A New Class of Flight Control Actuators Enhancing High-Speed Autonomous VTOL MAVs," Presented at the 12th Annual International Symposium on Smart Structures and Materials, San Diego, California, 6 - 10 March, 2005, SPIE Paper 5762-16.

90. Barrett, R., Vos, R., Tiso, P. and De Breuker, R., "Post-Buckled Precompressed (PBP) Actuators: Enhancing VTOL Autonomous High Speed MAVs," presented at the 13th Annual AIAA/ASME/AHS Adaptive Structures Conference, 18 - 21 April 2005, Austin, Texas, AIAA Paper no. 2005-2112.

91. Barrett, R., "National Geographic Television Channel Special 'Bullets,'" Invited Presentation and Documentary, filmed 25, 26 April 2005, first aired Sunday 18 September 2004.

92. Barrett, R., "Update on Selected Adaptive Aerostructures Topics, Programs & Technology," Invited Presentation., AFRL/MN, Eglin AFB, FL, 1 June 2005

93. Barrett, R., " Lightweight Flight Control, Morphing, Visual Stealth: New Adaptive Technologies Enhancing Micro and Nano Aerial Vehicles," proceedings of the Society of Automotive Engineers AeroTech International Powered Lift (IPLC) Conference and Exhibition, 6 October 2005, Dallas, Texas SAE Paper 05IPLC-40.

94. Barrett, R. and Hale, R., "Advanced Aerospace Materials and Structures," presentation delivered to Labconco, Kansas City, MO 14 October 2005.

95. Barrett, R., "Adaptive Aerostructures: Curriculum Changes Needed to Close the Aerospace Knowledge Gap," Proceedings of the 44th AIAA Aerospace Sciences Meeting and Exhibition, Reno, Nevada 9 – 12 January 2006, AIAA Paper AIAA-2006-0283.

96. Vos, R., Barrett, R., Van Tooren, M. and Krakers, L., "Post-Buckled Precompressed (PBP) Piezoelectric Actuators for UAV Flight Control," Proceedings of the 13th Annual International Symposium on Smart Structures and Materials, San Diego, California, 26 – 29 February 2006, SPIE Paper 6173-14.

97. De Breuker, R., Tiso, P., Vos, R. and Barrett, R., "Nonlinear Semi-Analytical Modeling of Post-Buckled Precompressed (PBP) Piezoelectric Actuators for UAV Flight Control," Proceedings of the 47th AIAA SDM Conference, Newport, R.I., 1 – 4 May 2006, AIAA Paper AIAA-2006-1794.

98. Barrett, R., "Adaptive Wing Technology," Invited Lecture, Demonstrations and Program Summary, Boeing Phantom Works, Renton, Washington, 8 June 2006.

99. Barrett, R., "Adaptive Aerostructures: An Abundance of Continuing Education Options," American Society of Mechanical Engineers (ASME) and American Institute of Aeronautics and Astronautics (AIAA) Adaptive Structures and Materials Systems Newsletter, Summer, 2006.

100. Barrett, R., "Adaptive Materials: A New Approach to Autopilot Actuators and Flight Control," Proceedings of the Society of Automotive Engineers (SAE) General Aviation Technology Conference and Exhibition, Wichita, Kansas 29 – 31 August, 2006, SAE Paper no. 06GATC-49.

101. Barrett, R., "Adaptive Materials, Revolutionizing Aircraft Structures," Invited Lecture at the Royal Military Academy of Belgium, Brussels, Belgium, 10 February 2007.

102. Barrett, R., "Adaptive Aerostructures, An Overview," Invited Lecture at the Vrije Universiteit Brussel, Mechanics of Engineering Materials Department 13 February 2007.

103. Barrett, R., Vos, R. and De Breuker, R., "Post-Buckled Precompressed (PBP) Subsonic Micro Flight Control Actuators and Surfaces," Proceedings of the Society of Photo-Optical Instrumentation Engineers 14th Annual International Symposium on Smart Structures and Materials, No. 6525-21, San Diego, CA 19 – 22 March 2007.

104. Barrett, R., "Adaptive Aerostructures for Military Applications," Invited Lecture at the Royal Military Academy of Belgium, Sponsored by the Department of Ordnance Development, 28 March 2007.

105. Barrett, R., "Improvements to Commercial and General Aviation via Adaptive Aerostructures," Proceedings of the 46th American Institute of Aeronautics and Astronautics (AIAA) 7th AIAA Aviation, Technology, Integration and Operations Conference, Belfast, Northern Ireland, paper no: AIAA-2007 - 7873, 18 - 20 September 2007.

106. Barrett, R. and Gluhareff, I., "Gluhareff Pressure Jet Engine: Past, Present and Future Opportunities," Proceedings of the 46th American Institute of Aeronautics and Astronautics (AIAA) Aerospace Sciences Meeting and Exhibit, Reno, Nevada 7 - 10 January 2008, paper no: AIAA-2008-867.

107. Barrett, R., (Invited Lecture) "Gluhareff Pressure Jet Engine: Past, Present and Future," invited, sponsored lecture at the US Air Force Research Lab (AFRL), Arnold Engineering and Development Center (AEDC), Tennessee, 20 March 2008.

108. Barrett, R. and Vos, R., "Design, Development and Testing of a Transonic Missile Fin Employing PBP/DEAS Actuators," Proceedings of the Smart Materials and Systems, Industrial and Commercial Applications of Smart Structures Technologies Conference, Vol. 6930, paper no: SPIE-693011, 31 March 2008.

109. Vos, R. and Barrett, R., "Magnification of Work Output in PBP Class Actuators Using Buckling/Converse Buckling Techniques," Proceedings of the 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, 16th AIAA/ASME/AHS Adaptive Structures Conference, Schamburg, IL 7 - 10 April 2008, paper no: AIAA-2008-1906.

110. Barrett, R., "Hypermaneuverability and Visual Cloaking; New Adaptive Aerostructures Technologies for Uninhabited Aerial Vehicles (UAVs)," Proceedings of the Bristol International Unmanned Air Vehicle Systems (UAVS) Conference, 7 - 9 April 2008, Bristol, UK.

111. Barrett, R. and Wu, J., "Superconducting Lightning Strike Protection System (SCALPS)," Presentation to the University of Kansas Transportation Research Institute External Advisory Board, 24 April 2008.

112. Barrett, R., Arabia: Basics, Culture and Transportation Issues," Presentation to the University of Kansas Transportation Research Institute External Advisory Board, 24 April 2008.

113. Long, R. and Barrett, R., "Testing of a Piezoelectrically Driven Airspike System on a Projectile," American Society of Mechanical Engineers (ASME), Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Ellicott City, Maryland, 28 – 30 October 2008, SMASIS08-497.

114. Vos, R. and Barrett, R., "Post-Buckled Precompressed Techniques in Adaptive Aerostructures: An Overview," Best Paper Competition Runner Up in the American Society of Mechanical Engineers (ASME), Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Ellicott City, Maryland, 28 – 30 October 2008, SMASIS08-458.

115. Barrett, R., "Adaptive Materials and Aerostructures: Revolutionizing Aerospace Systems," Plenary Paper presented at Aero India 2009 International Seminar, Aerospace Prospectives and Trends in Technologies, 9 February 2009.

116. Barrett, R., "Adaptive Materials and Aerostructures: Revolutionizing Aerospace Systems," Keynote Lecture at AeroIndia 2009, Yelahanka Air Force Base, India 12 February 2009.

117. Mark Groen; Michiel Van Schravendijk; Ronald Barrett; Roelof Vos, " Advanced control techniques for post-buckled precompressed (PBP) flight control actuators," Proceedings Vol. 7288, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 12 March 2009.

118. Michiel Van Schravendijk, Mark Groen, Roelof Vos, Ron Barrett, " Closed-Loop Control for High Bandwidth, High Curvature Post-Buckled Precompressed Actuators." 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 17th AIAA/ASME/AHS Adaptive Structures Conference AIAA-2009-2113, Palm Springs, California, May 4-7, 2009

119. Barrett, R., "Adaptive materials and aerostructures: revolutionizing uninhabited aerospace systems," (Invited Paper) Second International Conference on Smart Materials and Nanotechnology in Engineering, Proceedings Vol. 7493, Weihai, China, 8 - 11 July 2009.

120. Vos, R. and Barrett, R., "Pressure Adaptive Honeycomb: a New Adaptive Structure for Aerospace Applications," Proceedings Vol. 7647, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 7 - 10 March 2010, paper no. 7647-2B.

121. Sinn, R. and Barrett, R., "Shape Memory Alloy Post Buckled Precompressed (SMAPBP) Actuator Concepts and Theory," Proceedings Vol. 7643, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 7 - 10 March 2010, paper no. 7643-08.

122. Bramlette, R., and Barrett, R., "Semi-Solid State Adaptive Impedance Composites for HIRF Protection," Proceedings Vol. 7643, Active and Passive Smart Structures and Integrated Systems, San Diego, California, March 2010, paper no. 7643-92.

123. Cravens, S., and Barrett, R., "Ultrasonic Piezoelectric Cleaning of Acoustic Vector Sensing Elements," Proceedings Vol. 7643, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 7 - 10 March 2010, paper no. 7643-108.

124. Brennison, M., Barrett, R., and Kerth, L., "Development & Flight Test of a Shape Memory Alloy Actuator Flight Control System," Proceedings Vol. 7643, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 7 - 10 March 2010, paper no. 7643-116.

125. Barrett, R. and Barnhart, R., "Post-Buckled Precompressed Solid State Adaptive Rotor," Proceedings Vol. 7643, Active and Passive Smart Structures and Integrated Systems, San Diego, California, 7 - 10 March 2010, paper no. 7643-74.

126. Barrett, R., "Acoustic Vector Sensing for UAV/UAS Airborne Sense and Avoid," presentation to US Department of Justice, Office of Justice Programs, Washington, DC, 29 March 2010.

127. Barrett, R., "Tethered Hovering Platform for Law Enforcement," presentation to US Department of Justice, Office of Justice Programs, Washington, DC, 29 March 2010.

128. Vos, R., and Barrett, R., "Pressure Adaptive Honeycomb: Mechanics, Modeling and Experimental Investigation," proceedings of the 18 AIAA/ASME/AHS Adaptive Structures Conference, Orlando, Florida, AIAA-2010-2664, 13 April 2010.

129. Barrett, R., "Adaptive Imaging and Guided Fuze Technologies," National Defense Industrial Association 54th Annual Fuze Conference, Exhibition and Firing Demonstration, Kansas City, MO, 10 May 2010.

130. Barrett, R., "Low Volume, Negligible EMI Advanced Guided Bullet and Mortar Flight Control Actuators," National Defense Industrial Association Joint Armaments Conference, Exhibition and Firing Demonstration, Dallas, TX, 19 May 2010.

131. Barrett, R., "Hovering Precision Weapons: Enabling Precise Surgical Strike and Collocated Close Air Support from Tactical to Strategic Distances," National Defense Industrial Association Joint Armaments Conference, Exhibition and Firing Demonstration, Dallas, TX, 20 May 2010.

132. Barrett, R., "Unmanned Aircraft Systems for Law Enforcement: Challenges, Solutions," National Institute of Justice Technology Conference, 14 June 2010.

133. Sinn, T. and Barrett, R., Design, Manufacturing and Test of a High Lift Secondary Flight Control Surface with Shape Memory Alloy Post-Buckled Precompressed Actuators, American Society of Mechanical Engineers Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Paper No. SMASIS2010-3681, September 28 - October 1, 2010.

134. Vos, R. and Barrett, R., Applications and Mechanics of Pressure Adaptive Honeycomb, American Society of Mechanical Engineers Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Paper No. SMASIS2010-3634, September 18 - 1 October 2010.

135. Barrett, R., "Dragless Wing & Ultra-High BPR Powerplant Technologies," Invited Presentation Delivered to Lt. General Rusty Findlay Staff, Air Mobility Command, 25 October 2010.

136. Barrett, R., "Tethered Hovering Platform for Law Enforcement: Challenges, Solutions," presentation to HiPer Technologies, Lawrence, Kansas 19 November 2010.

137. Advanced Adaptive Aerostructures Technologies for Drag Reduction and Aircraft Performance," Invited Presentation at the Air Mobility Command, Air Force Research Laboratory (AMC-AFRL) Symposium on Innovative Aerodynamics: Potential Solutions for Improving Mobility Efficiency, Scott, Air Force Base, IL, 1 December 2010.

138. Barrett, R., "Pressure Adaptive Honeycomb, General Aviation Applications," presentation to Cessna Chief of Aircraft Design, Mr. Albert Dirkszwager, Wichita, Kansas 5 February 2011.

139. Barrett, R. and Honea, R., "Acoustic Vector Sensing Technologies," presentation delivered to the DoE/National Nuclear Security Administration KC Plant, Kansas City, MO, 25 February 2011.

140. Barrett, R., "Billions to be $aved, Reducing USAF Legacy Fleet Aircraft Fuel Consumption," Invited Lecture presented to AMC Commander, General Vern Findley and AMC Chief Scientist Dr. Don Erbschloe Scott AFB, Illinois 28 February 2011. (Invited)

141. Barrett, R., "Tethered Hovering Platform Technologies," presentation delivered to HiPer Technologies, Lawrence, Kansas 4 March 2011.

142. Vos, R., Scheepstra, J., and Barrett, R., "Topology Optimization of Pressure Adaptive Honeycomb for a Morphing Flap," Proceedings Volume 7977 , Active and Passive Smart Structures and Integrated Systems, San Diego, California, 8 - 9 March 2011, paper no. 7977-54.

143. Barrett, R., Barnhart, R. and Bramlette, R., "Steerable Adaptive Bullet (StAB) Piezoelectric Flight Control System," Society of Photo-Optical Instrumentation Engineers, Smart Structures and Non-Destructive Evaluation Symposium, Active and Passive Smart Structures and Integrated Systems Conference, 11 - 15 March 2012, San Diego, CA, 8341-32.

144. Vos, R., Scheepstra, J., and Barrett, R., "Topology Design of Pressure Adaptive Honeycomb for a Morphing Fowler Flap," 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, 19th AIAA/ASME/AHS Adaptive Structures Conference, AIAA-2011-2130-170, Denver, CO 4 - 7 April 2011.

145. Barrett, R., "Competitive UAV Design Methods for Undergraduate Instruction," presentation delivered to Lockheed-Martin Advanced Design Bureau, Marietta, GA, 1 May 2011.

146. Barrett, R., Honea, R. (TRI Director), Bowers, A. (NASA Dryden Dep. Tech. Director), Voracek, D. (NASA Dryden Chief Technologist), Fisher, S. (President, Ikhana Corp.), White, E. (Director, Boeing Integrated Defense Systems), Anemaat, W. (President, DAR Corp.), and Roskam, J. (Emeritus Distinguished Professor), "Adaptive Aerostructures for Air Mobility Fleet Fuel Efficiency Enhancement," Invited Lecture and Juried Research Proposal presented to USAF Chief Scientist, Dr. Kevin Geiss, AMC Commander, General Vern Findley, AMC Chief Scientist Dr. Don Erbschloe and AFRL Fuel Efficiency Science Advisory Board, Scott AFB, Illinois 29 June 2011. (Invited)

147. Barrett, R., White, E. (Boeing Integrated Defense Systems), and Honea, R., "Fuel Efficiency Enhancement Technologies for Various USAF Fleets," Presentation to the USAF Air Vehicles Directorate, Wright-Patterson AFB, Ohio 16 August 2011.

148. Barrett, R., and Honea, R., "Advanced Transportation-Related Technologies," Midwest Research Institute Global, Kansas City, MO 26 October 2011.

149. Barrett, R., Barnhart, R. and Bramlette, R., "Steerable Adaptive Bullet (StAB) Piezoelectric Flight Control System," Society of Photo-Optical Instrumentation Engineers, Smart Structures and Non-Destructive Evaluation Symposium, Active and Passive Smart Structures and Integrated Systems Conference, 11 - 15 March 2012, San Diego, CA, 8341-32.

150. Barrett, R., Honea, R., "Adaptive Aerostructures for USAF Fleet Fuel Efficiency Enhancement," invited presentation delivered to the Undersecretary of the US Air Force for Fuel Efficiency, Dr. Kevin Geiss, The Pentagon, Virginia, 5 April 2012.

151. Barrett, R. and Bramlette, R., "Semi-Solid State Adaptive Impedance Composites & Coatings for Lightning Strike/HIRF Protection," presentation delivered to Boeing Chief of New Product Development, Mr. Perry Rea, Lawrence, Kansas, 16 April 2012.

152. Barnhart, R., and Barrett, R., "Piezoelectric Adaptive Flutter Test Vane: Low Net Passive Stiffness Techniques for Deflection Amplification," 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, 23 - 26 April 2012, Honolulu, Hawaii, paper no. AIAA 2012-1906.

153. Barrett, R., " Supersonic Hovering Aerial Vehicle (SHAV): Recoverable, Strategic Reach at High Mach with Sub-Meter Precision," National Defense Industrial Association Joint Armaments Conference, Exhibition and Firing Demonstration, Seattle, Washington, 14 - 17 May 2012, No. 13655.

154. Barrett, R., "Vortically Injected Pressurized Expandable Ramjet (VIPER) Static Thrust Generating Missile and Munition Jet Engine," National Defense Industrial Association Joint Armaments Conference, Exhibition and Firing Demonstration, Seattle, Washington, 14 - 17 May 2012, No. 13653.

155. Barrett, R., "Solid State Guided Bullet Flight Control Actuators," National Defense Industrial Association Joint Armaments Conference, Exhibition and Firing Demonstration, Seattle, Washington, 14 - 17 May 2012, No. 13654.

156. Barrett, R., "Introduction to Adaptive Aerostructures for High Performance Aircraft," delivered to the Technical University of Delft, Holland, 29 May 2012.

157. Barrett, R., "Aerospace History: Lessons to Learn from Mistakes, Screwups and Failures," delivered to the Technical University of Delft, Holland, 29 May 2012.

158. Barrett, R., "Flight Control of Hard Launch Munitions via Adaptive Materials & Structures," invited presentation delivered to the Advanced Munition Design Group, Naval Surface Warfare Center, Dahlgren, Virginia, 13 August 2012.

159. Barrett, R., "American Institute of Aeronautics and Astronautics Aircraft Design Award Ceremony and Presentation," The Residence of the US Ambassador to The Netherlands, Den Haag, Holland, 24 September 2012.

160. Barrett, R., "American Institute of Aeronautics and Astronautics Aircraft Design Award Presentation," Technical University of Delft, Holland, 24 September 2012.

161. Barrett, R., Honea, R., "Adaptive Aerostructures for USAF Fleet Fuel Efficiency Enhancement," invited presentation delivered to the Deputy Director for Innovation, Mr. John Jennings, The Pentagon, Virginia 23 October 2012.

162. Barrett, R., Honea, R., and White, E., "Adaptive Aerostructures for USAF Aircraft Fuel Efficiency Enhancement," invited presentation delivered to the USAF Research Lab, Wright-Patterson Air Force Base, Dayton, Ohio, 16 November 2012.

163. Barrett, R., Honea, R., and White, E., "Near-Term Fuel Efficiency Enhancement of the B-52 Fleet using Smart Aerostructures," invited presentation delivered to the USAF Chief Scientist of Global Strike Command, 18 December 2012.

164. Barrett, R. and Barrett, C., " Biomimetic FAA-Certifiable, Artificial Muscle Structures for Commercial Aircraft Wings," Invited Lecture and Presentation at the 7th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (BAMN2013), Jeju Island, South Korea, 26 - 30 August 2013.

165. Barrett, R., and Barrett C., " Revolutionary Adaptive Aerostructures, Changing Flight via Nature's Analogs for Dramatic Fuel Savings," 1st international Conference and Exhibition on Mechanical and Aerospace Engineering, San Antonio, Texas, 30 September – 2 October 2013.

166. Barrett, R., "FAR 23/25 Certifiable Adaptive Structures: Enabling High CLmax and Inherent Gust Rejection via Mother Nature's Example," Invited Presentation to Wichita Section of the AIAA, Wichita, Kansas, 6 November 2013.

167. Barrett, R. (2015). Statistical Time and Market Predictive Engineering Design (STAMPED) Techniques for Preliminary Aircraft Sizing, CEAS2015-206. In 5th Annual Challenges in European Airspace Conference (CEAS) Conference, Delft, Holland. (Refereed) 7-11 Sept 2015

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171. Richard B. Bramlette, Ronald M. Barrett-Gonzalez, Christopher Depcik, and Irina Gluhareff. "The Effects of Scaling on the Design and Performance of the Brayton-Gluhareff Pressure Jet Engine", 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-0120), 8 - 12 January 2017.

172. Richard B. Bramlette and Ronald M. Barrett-Gonzalez. "Design and Flight Testing of a Convertible Quadcopter for Maximum Flight Speed", 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-0243) http://dx.doi.org/10.2514/6.2017-0243 8 - 12 January 2017.

173. Richard B. Bramlette, Christopher Depcik, and Ronald M. Barrett-Gonzalez. "The Effects of Planar Symmetry and Radiative Heat Losses in a Three-Dimensional Transient CFD Simulation of Right Angle Flow Through a Brayton-Gluhareff Cycle Pressure Jet Engine", 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-1539) 8 - 12 January 2017.

174. Richard B. Bramlette, Taylor A. Johnston, and Ronald M. Barrett-Gonzalez. "Design, Construction, and Flight Testing of the World's Fastest Micro-Scale Quadcopter", 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-0012) 8 - 12 January 2017.

175. Barrett, R., and Schumacher, L., "Adaptive Munitions and Convertible Weapons, Historical Overview, Army/DARPA Projects and Implications for Aerial Gunnery," presented at the USAF Munitions Directorate, AFRL/MN, 23 March 2017.

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181. Barrett, R. M., & Schumacher, L. N. (2019, May 15). Hardened, Compact and Fast: Adaptive Flight Control Actuators for Guided Hard-Launched Munitions. NDIA 62nd Annual Fuze Conference 13 – 15 May 2019, Buffalo, NY. Proceedings of the NDIA 62nd Annual Fuze Conference 13 – 15 May 2019, presentation no. 21779.

182. Barrett, R. "Flight-Safe Discarding Sabot Ammunition: Bigger Impact, Smaller Guns, Smaller Rounds, Technical Briefing to US Special Operations Command via Bell Textron 19 January 2021.

183. Barrett, R., and Schumacher, L., "Flight Safe Saboted Aerial Gunnery Rounds Part I: History, Interior Ballistics, Exit Dynamics and Freeflight Aeromechanics," 64th Annual NDIA Fuze Conference, Paper No. 23607, 11 - 12 May 2021.

184. Barrett, R., and Schumacher, L., "Flight Safe Saboted Aerial Gunnery Rounds Part II: Performance, Implications for Rotary- and Fixed-Wing Attack Aircraft and Intellectual Property Licensing Landscape," 64th Annual NDIA Fuze Conference, Paper No. 23608, 11 - 12 May 2021.

185. Barrett, R., " Thermadapt Building Coverings: R33 Performance in 1cm of Thickness," Paper No. CEE 1504, 3rd International Conference on Advanced in Civil and Ecological Engineering Research (ACEER), 27 - 30 July 2021.

186. Barrett, R., "Flight Safe Discarding Sabot Ammunition," NDIA Air Armament Symposium, Eglin AFB, Florida 2 - 3 November 2021.

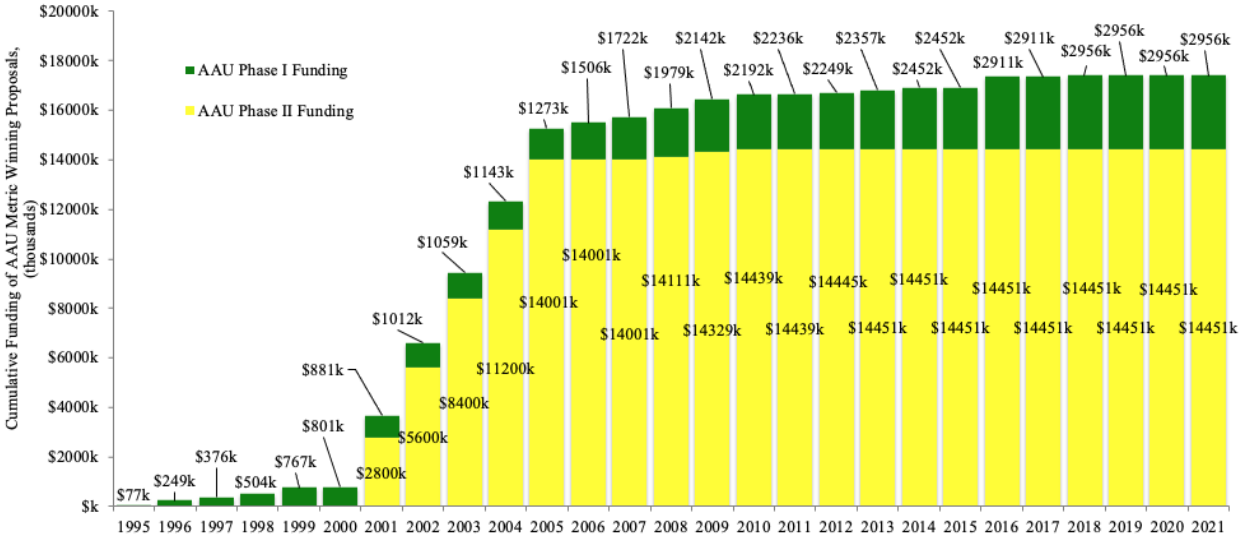
187. Barrett, R., and Wolf, N., "Historical Overview of Aerial Gunnery Ammunition Development 1913 - 2022," NDIA 65th Annual Fuze Conference, Renton, Washington 10 - 12 May 2022, Paper No. 24200.

188. Barrett, R., and Wolf, N., "Flight Safe Discarding Sabot Ammunition: Configurations, Range Data, General Performance & IP Status," NDIA 65th Annual Fuze Conference, Renton, Washington 10 - 12 May 2022, Paper No. 24201.

189. Barrett, R., and Wolf, N., "Hypersonic Aerial Gunnery Ammunition," NDIA Future Force Capabilities Exhibition and Conference, Austin, Texas 19 - 22 September 2022, Paper no. 24706.

190. Barrett, R., and Wolf, N., "Outgunning the A-10 with an Apache or FARA: New Flight-Safe Saboted Ammunition for Attack Rotorcraft," NDIA Future Force Capabilities Exhibition and Conference, Austin, Texas 19 - 22 September 2022, Paper no. 24707.

4. GRANTS AND/OR OTHER FUNDED PROJECTS



Cumulative Career-Long External Funding of Competitive Winning Proposals in terms of Phase I and Phase II AAU Metrics for Employing Institutions using Time- Normalized Expenditure Rates

4.1 EXTERNAL FUNDING

4.1.1 SELECTED FUNDED PROPOSALS

** = funded competitive, peer reviewed project*

	Project	Sponsor	Performance Period	Total Proposal Project Amount Attracted	AAU Phase I Indicator Funding	AAU Phase II Indicator Funding	Amount Expended as Co-I	Amount Expended as PI
1	Low Cost Attritable Aircraft Platform Sharing Phase II	The Boeing Company	9/2018 - 5/2019	$24,994.68	$24,994.68			$24,994.68
2	Low Cost Attritable Aircraft Platform Sharing Phase I	The Boeing Company	4/2018 - 11/2018	$19,998	$19,998			$19,998
3	Adaptive Material Actuator for Guided Hard-Launched Munitions*	US Army APCT AMRDEC	12/8/14 -- 12/31/16	$459,047	$459,047			$459,047
4	MultiPlex Aircraft Fab & Testing*	Competitive, Federal, Externally Reviewed KUTRI Funding	1/1/14 - 8/15/14	$159,842	$159,842			$159,842
5	Subscale MultiPlex Aircraft Fabrication and Testing*	Competitive, Federal, Externally Reviewed KUTRI Funding	8/1/13 - 7/31/14	$29,877	$29,877			$29,877

6	Pressure Adaptive Wing Surface (PAWS)*	NASA Ames	10/11 - 8/13	$40,000	$40,000			$40,000
7	Adaptive Flutter Vane Testing*	Competitive, Federal, Externally Reviewed KUTRI Funding	8/10 - 8/11	$61,076	$61,076			$61,076
8	MicroBlown Enabling Project for IP Protection and Project Initiation*	Competitive, Federal, Externally Reviewed KUTRI Funding	10/09 - 5/10	$38,000	$38,000			$38,000
9	MicroFlown Enabling Project for IP Protection and Project Initiation*	Competitive, Federal, Externally Reviewed KUTRI Funding	4/09 - 12/09	$28,000	$28,000			$28,000
10	Aircraft Energy Harvesting via Post Buckled Piezoelectric Elements*	ADMRC	1/08 - 12/09	$200,000	$40,000		$40,000	
11	Fatigue Performance of Skewed Steel Bridges Treated with UIT, Bolting and Composites*	Kansas DOT - KTRAN	1/08 - 12/09	$75,000		$18,750	$18,750	
12	Enhancement of Steel Bridge Girder Systems Subject of Distortion-Induced Fatigue*	Transporation Pooled Fund (TPF)	1/09 - 12/10	$892,496		$218,750	$218,750	
13	Fatigue Enhancement of Undersized, Drilled Crack-Stop Holes*	Competitive, Federal, Externally Reviewed KUTRI Funding	1/08 - 9/09	$82,090	$82,090			$41,045
14	Superconducting Aircraft Lightning Strike Protection Project*	US DOT	1/2008 - 12/09	$110,000	$110,000			$110,000
15	Development of Adaptive Electrostrictive Nanocomposites*	ADMRC	1/2008 - 12/09	$200,000		$200,000		$200,000
16	Modified Rainbow Arc Entropy Pulse Generating Glider*	US Army/SMDC/ Radiance Tech.	4/06 - 9/08	$200,000	$200,000			$200,000
17	Constrained Layer Damping (CoLD) Fatigue Fuse Structural Fatigue Elimination (extension) *	Competitive, Federal, Externally Reviewed KUTRI Funding	1/06 - 12/08	$50,000	$50,000			$12,500

18	Constrained Layer Damping (CoLD) Fatigue Fuse Structural Fatigue Elimination*	Competitive, Federal, Externally Reviewed KUTRI Funding	1/06 - 12/08	$172,500	$172,500			$43,125
19	Undergraduate Research	KUCR	8/05 - 12/05	$1,200		$1,200		$1,200
20	Shape Memory Alloy Flight Control Surfaces*	Nielsen Engineering and Research (NEAR)/USN	9/05 - 3/06	$35,000	$35,000			$35,000
21	Miniature Cruise Missile Airframe Technology (MCMAT) Phase II*	Boeing/USAF AFRL	7/05 - 12/07	$225,260	$225,260			$225,260
22	Miniature Cruise Missile Airframe Technology (MCMAT) Phase I*	Boeing/USAF AFRL	9/04 - 6/05	$74,740	$74,740			$74,740
23	XQ-138 Fab. and Testing in the Adaptive Aerostructures Laboratory and Other Research*	ST Aerospace	9/00 - 5/03	$14,000,000		$14,000,000	$371,000	
24	Development of Curved Adaptive Missile Fin*	USA AMCOM	6/02 - 9/02	$50,000	$50,000			$50,000
25	Active Thunder Control Surfaces for Miniaturized Munitions*	Qortek/USAF WL/MNAV	8/01 - 9/03	$187,483	$187,483			$187,483
26	Miniature Interceptor Technology Testbed*	Space and Missile Defense Command	2/99 - 10/99	$65,000	$65,000			$65,000
27	Phase I Range-Extended Adaptive Munition*	DARPA & US Army Aberdeen Proving Ground, Maryland	12/98 - 6/99	$90,000	$90,000			$90,000
28	Phase II Range-Extended Adaptive Munition*	DARPA & US Army Aberdeen Proving Ground, Maryland	7/99 - 10/02	$135,000	$135,000			$135,000
29	Aerodynamic Characterization of a Micro Aerial Vehicle*	DARPA, Alexandria, Virginia	3/99 - 10/99	$96,401	$96,401		$96,401	
30	Materials EPSCoR *	NSF/Auburn	9/95 - 7/98	$48,681	$48,681		$48,681	
31	C-Block Rotor Flaps*	Army Research Office	9/96 - 8/99	$92,546	$92,546			$92,546

32	WIDT Phase II*	McDonnell Douglas & USAF Armament Div., Eglin Air Force Base, FL	6/96 - 8/98	$93,811	$93,811			$93,811
33	Barrel-Launched Adaptive Munition Extended Range BLAMER*	AFOSR	1/96 - 12/96	$25,000	$25,000			$25,000
34	Rotationally Active Flutter Test Surface, RAFTS*	NASA Dryden	2/96 - 2/98	$48,000	$48,000			$48,000
35	WIDT Phase I*	McDonnell Douglas & USAF Armament Div., Eglin Air Force Base, FL	9/95 - 5/96	$35,814	$35,814			$35,814
36	Compressed Mk 83*	USAF Armament Div., Eglin Air Force Base, FL	9/95 - 8/97	$132,925	$132,925			$132,925
37	Super-Active Shape-Memory Alloy Composites*	Auburn University Research Grant-in-Aid	5/95 - 5/96	$5,000	$5,000			$5,000
			Totals:	$17,961,167	$2,956,086	$14,451,285	$793,582	$2,776,869

4.1.2 PROPOSALS UNDER REVIEW

1. Passively Dynamic Prandtl-tailored Aerocompliant δ_3 PAH Wingtip Extensions
   Submitted to NASA HQ
   7 May 2018, 23 pages — PI: Ron Barrett
   Investigators: C. Zheng, Z.J. Wang — Funding Level: $6,854,841 total
   Status: pending — Performance period: 5/19 – 7/20

2. Dynamically Aerocompliant PAH Flaps and Prandtl-tailored δ_3 PAH Wingtip Extensions
   Submitted to NASA HQ
   7 May 2017, 23 pages — PI: Ron Barrett
   Investigators: C. Zheng, Z.J. Wang — Funding Level: $3,571,321 total
   Status: pending — Performance period: 5/19 – 7/22

4.1.3 OTHER PROPOSALS SUBMITTED

SELECTED FULLY DEVELOPED PROPOSALS AND RESEARCH PROJECTS

1. Kansas University Bioinspired Center for Flight Research
   Submitted to AFOSR
   March 2014, 47 pages — PI: Ron Barrett
   Investigators: R. Honea, M. Denning et al. — Funding Level: $425,000
   Status: declined — Performance period: 8/14 – 8/17

2. Development of Aircraft Design Modeling Tools for Dynamically Aerocomopliant Pressure Adaptive Wings
   Submitted to NASA HQ

March 2014, 47 pages — PI: Ron Barrett
Investigators: R. Honea, M. Denning et al. — Funding Level: $1,807,930
Status: declined — Performance period: 8/14 – 8/17

3. Fuel Efficiency Enhancement Techniques for Retrofit of the KC-135 Fleet
Submitted to US Air Force Material Command
April 2013, 47 pages — PI: Ron Barrett
Investigators: R. Honea, M. Denning et al. — Funding Level: $39,000,000
Status: declined — Performance period: 8/13 – 8/18

4. Supersonic Hovering Air Vehicle Initiation Study
Submitted to DARPA TTO
March 2013, 27 pages — PI: Ron Barrett
Investigators: R. Honea, M. Denning et al. — Funding Level: $1,800,000
Status: declined — Performance period: 8/13 – 8/16

5. Pressure Adaptive Wing Surface
Submitted to NASA Ames
March 2011, 29 pages — PI: Ron Barrett
Investigators: — Funding Level: $40,000
Status: awarded — Performance period: 7/8/11 – 7/7/13

6. Enhancement of Welded Steel Girders Susceptible to Distortion-Induced Fatigue
Submitted to KDOT
February 2012, 32 pages — PI: S. Rolfe
Investigators: R. Barrett, A. Matamoros, C. Bennett — Funding Level: $892,496
Status: awarded — Performance period: 10/11 – 9/14

7. Fatigue Enhancement of Undersized Drilled Crack-Stop Holes
Submitted to KUTRI
March 2011, 7 pages — PI: R. Barrett
Investigators: R. Barrett, A. Matamoros, C. Bennett — Funding Level: $82,090
Status: awarded — Performance period: 10/11 – 9/14

8. Design, Development and Testing of Active Dynamically Aerocompliant Pressure Adaptive Wing Structures (PAWS)
15 August 2012, 26 pages — PI: Ron Barrett
Investigator: — Funding Level: $1,125,000 total
Status: declined — Performance period: 8/01 – 9/03

9. Piezoelectronically Activated THUNDER Control Surfaces for Miniaturized Munitions
1 September 2002, 19 pages — PI: Ron Barrett (100%)
Investigator: — Funding Level: $187,483 total
Status: awarded — Performance period: 8/01 – 9/03

10. Development of a Miniature Interceptor Technology Testbed Phase I
Submitted to: US Army Space and Missile Defense Command
8 December 1998, 10 pages — PI: Ron Barrett (100%)
Investigator: — Funding Level: $65,000 total
Status: awarded — Performance period: 2/99 - 10/99

11. 50 Caliber Range-Extended Adaptive Munition, Phase I
Submitted to: Defense Advanced Research Projects Agency (DARPA) & Lutronix Corporation
1 December 1998, 9 pages — PI: Ron Barrett (100%)
Investigator: — Funding Level: $90,000 total
Status: awarded — Performance period: 12/98 - 6/99

12. Shipborne Countermeasure Range Extended Adaptive Munition
Submitted to: Defense Advanced Research Projects Agency (DARPA) & Lutronix Corporation
24 October 1995, 9 pages — PI: Ron Barrett (90%)

Investigators: A. Ahmed (5%) & R.S. Gross (5%) Funding Level: $900,000 total
Status: awarded to Lutronix, subcontract negotiated w/AU Performance period: 7/99 - 10/02

13. Aerodynamic Characterization of a Micro Aerial Vehicle
Submitted to: Defense Advanced Research Projects Agency (DARPA) & Lutronix Corporation
8 December 1998, 10 pages PI: A. Ahmed (90%)
Investigator: R.S. Gross (10%) Funding Level: $96,401 total
Status: awarded Performance period: 3/99 - 10/99

14. Smart Materials for Transport Control
Submitted to: The National Science Foundation
8 July 1994, 148 pages PI: Ralph Zee
Investigators: Jeff Fergus, Bill Gale, Xiao Feng Yang, Bor Jang, Kamalan Bhat, Jeff Fergus, Daryush Ila, Gregg Janowski, Shaik Jeelani, Ashok Kumar, Hassan Mahfuz, Hossein Maleki, German Mills, Douglas Rigney, James Rigsbee, Mara Rizzatti, Uday Vaidya, Garvin Wattuhewa, Robert Zimmerman, Ron Barrett
Funding Level: $998,236 for three years ($48,681 so far for Barrett)
Status: awarded Performance period: 9/95 - 7/98

15. Rotationally Adaptive Flutter Test Surface
Submitted to: NASA Dryden Flight Test Center
24 October 1995, 25 pages PI: Ron Barrett (90%)
Investigator: R.S. Gross (10%) Funding Level: $48,000 total over two years
Status: awarded Performance period: 2/96 - 1/98

16. Barrel-Launched Adaptive Munition Experimental Round Research
Submitted to: The U. S. Air Force Office of Scientific Research & Wright Laboratory Armament Directorate
16 October 1995, 25 pages PI: Ron Barrett (90%)
Investigator: Don Spring (10%) Funding Level: $25,000 for one year
Status: awarded Performance period: 1/96 - 12/96

17. Adaptive Stabilization and Flight Control Surface Research for Compressed Carriage Air-to-Ground Weapons, Phase I
Submitted to: McDonnell Douglas Aerospace Corporation
26 April, 1995, 22 pages PI: Ron Barrett (80%)
Investigator: Don Spring (20%) Funding Level: $35,814 for 10 months
Status: awarded: Performance period: 9/95 - 5/96

18. Adaptive Stabilization and Flight Control Surface Research for Compressed Carriage, Phase II
Submitted to: McDonnell Douglas Aerospace Corporation
26 April, 1995, 24 pages PI: Ron Barrett (90%)
Investigator: R.S. Gross Funding Level: $93,811 for 22 months
Status: awarded Performance period: 10/96 - 8/98

19. Development of a Balanced, Active Rotor Blade Flap System using Piezoceramic C-Block Actuators
Submitted to the U.S. Army Research Office, Structural Mechanics Branch
1 April 1995, 34 pages PI: Ron Barrett (50%)
Co-PI: D. Brei, Univ. of Michigan, Ann Arbor (50%) Funding Level: $182,490 over three years
Status: awarded Performance period: 5/96 - 5/99

20. Shape-Memory Alloy Artificial Muscle Research
Submitted to: Auburn University, under the Research Grant-in-Aid Program
31 January 1995, 10 pages PI: Ron Barrett (90%)
Investigator: R.S. Gross (10%) Funding Level: $6,000 for 1 year
Status: awarded Performance period: 6/95 - 6/96

21. Low Drag, Low Observable Compressed Air-to-Ground Smart Weapons Research
Submitted to the USAF Armament Directorate, Weapons Flight Mechanics Branch
29 December 1994, 27 pages PI: Ron Barrett (85%)
Co-PIs: John Cochran (5%), Don Spring (10%) Funding Level: $132,925 over two years

Status: awarded	Performance period: 9/95 - 8/97

22. Active Torque-Plate Research for a Solid State Rotor System
Submitted to the National Science Foundation
14 June 1993, 19 pages — PI: Ron Barrett
Funding Level: $55,546 — Status: selected for award

23. Inflatable Smart Missile Wing Design Evaluation, Phase II
Submitted to the U.S. Air Force Armament Directorate
28 December 1992, 52 pages — PI: S. Farokhi
Co-Investigator: R. Barrett — Funding Level: $750,000
Status: awarded — Performance period: 5/93 - 5/95

24. Advanced Low-Cost Smart Missile Fin Technology Evaluation, Phase I
Submitted to the U.S. Air Force Armament Directorate, WL/MNAV
10 January 1992, 19 pages — PI: Ron Barrett
Funding Level: $50,000
Status: awarded — Performance period: 6/93 - 12/93

25. Inflatable Smart Missile Wing Design Evaluation, Phase I
Submitted to the U.S. Air Force Armament Directorate, WL/MNAV
10 January 1992, 19 pages — PI: S. Farokhi
Co-Investigator: R. Barrett — Funding Level: $50,000
Status: awarded — Performance period: 5/92 - 11/92

4.2 INTERNAL FUNDING

Project	Sponsor	Performance Period	Total Amount	AAU Phase I Indicator	AAU Phase II Indicator	Amount as PI
SAE AeroDesign	KUTRI	10/11 - 9/12	$12,585	$12,585		$12,585

5. HONORS AND AWARDS FOR RESEARCH

5.1 INTERNATIONAL RESEARCH AWARDS

1. **Winner of the AIAA Abe Zarem Research and Mentorship Award:** Vos, R. and Barrett, R., "Magnification of Work Output in PBP Class Actuators Using Buckling/Converse Buckling Techniques," *Proceedings of the 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference,* Schamburg, IL 7 - 10 April 2008, paper no: AIAA-2008-1906.
2. **First Place Winner,** American Institute of Aeronautics and Astronautics International Research Paper Competition, Bramlette, R. and Leurck, R., "A Method for Control Surface Deflection Utilizing Piezoceramic Bimorph Actuators," April 2004.
3. Barrett, R., "The Flexspar Solid State Adaptive Stabilator," winner of the *1998 Discover Award for Aviation and Aerospace,* Discover Magazine's top award for new innovations in the fields of Aviation and Aerospace Industries.

5.2 DOMESTIC RESEARCH COMPETITION AWARDS

1. **First Place Winner,** American Institute of Aeronautics and Astronautics Region II Research Paper Competition, Bramlette, R. and Leurck, R., "A Method for Control Surface Deflection Utilizing Piezoceramic Bimorph Actuators," April 2004.

2. **Second Place Winner,** American Institute of Aeronautics and Astronautics Southeast Region Student Paper Competition,, Brennison, M. "Development and Flight Test of a Shape Memory Alloy Actuator Flight Control System," April 2004.
3. **Third Place Winner,** American Institute of Aeronautics and Astronautics Southeast Region Student Paper Competition, Brennison, M. "The Reduction of Friction In Pipes and Tubing by Use of Advanced Silane," April 2002.
4. **First Place Winner,** American Institute of Aeronautics and Astronautics Southeast Region Student Paper Competition, Padgett, D., "Design, Development and Testing of a Shape-Memory-Alloy Aircraft Tail Boom," April 2002.
5. **First Place Winners,** AIAA Southeast Region Student Paper Competition, Corpening, J., and Reasonover, C., "An Experimental and Analytical Investigation of Boundary Layer Reattachment using Tangential Piezoelectric Synthetic Jet Actuators," April 2001.
6. **Second Place Winner,** AIAA Southeast Region Student Paper Competition, Law, David, "An Experimental and Analytical Investigation of an Active Wing Using Root Twist Manipulation," 11 April 1998.
7. **Third Place Winners,** AIAA Southeast Region Student Paper Competition, Phillip Frye and Michael Schliesman, "Design and Testing of a Flight Controller for a Solid State Adaptive Rotor Helicopter," 11 April 1997.

Demonstration of Jet Engine for K-12 Students and educators

5.3 KU SPECIFIC RESEARCH COMPETITION AWARDS

1. **1st Place Winner,** Graduate Research Competition Award, Bonet, Eric, "Bridge Repair Utilizing Plastics and Stitches," the University of Kansas Graduate School, April 2014.
2. **2nd Place Winner** in Oral Competition, Graduate Engineering Association, 7th Annual Research Competition, Bonet, Eric, "Stitched Bridge Repair," 11 April 2014.
3. **3rd Place Winner** in Poster Competition, Graduate Engineering Association 7th Annual Research Competition, Bonet, Eric, "Stitched Bridge Repair," 11 April 2014.

6. SERVICE RECORD

6.1 UNIVERSITY OF KANSAS SERVICE

6.1.1 DEPARTMENTAL SERVICE ACTIVITIES

- Minority/Native/Underrepresented Outreach Coordinator
- Departmental K-12 Coordinator (flying aircraft, running jet engines, launching rockets etc.)
- Departmental Study Abroad Advisor (just under a dozen students a year participate in this program as we have very active exchanges between TU Delft, several institutions in Germany and around the world)
- Leader, DARPA Proposal and Project XVTOL Team
- Leader, KUAE NASA Learn Proposal Team
- Strategic Planning Committee Member
- AIAA Student Chapter Advisor
- SAE Student Chapter Advisor
- Departmental AIAA Coordinator for Propulsion, Space & Aircraft Design Wins with media and KBOR
- Handled multiple challenging sexual assault and discrimination cases for undergrad and graduate students in KUAE
- Coordinated the media contacts and releases centered on the Department's Design Competition wins Chair, Departmental Publicity and Recruiting Committee
- Co-Organizer of many activities including the Department Open-House, E-Day and Christmas
- Director of the Adaptive Aerostructures Laboratory
- Member, Departmental Curriculum Committee
- Member, Departmental Facilities and Equipment Committee

- Member, Departmental Graduate Admissions Committee
- Member, Departmental Research Committee
- Member, Departmental Scholarship Committee
- Member, Departmental Student Awards Committee

6.1.2 SCHOOL SERVICE ACTIVITIES

- Engineering Senate Executive Committee (ESEC) Member, then Chair
- LEEP 2 Design Room Advisory Group Member
- Member, CEAE Fatigue and Fracture Working Group
- SoE FAA COE Working Group
- Phase II Library and Student Support Committee
- Guest Lecturer, BioE 801, 29 October 2013
- Guest Lecturer on India Travel to the India Impact Study Abroad Program, 24 November 2013
- Engineering Expo Coordinator for AIAA/SAE AeroDesign

6.1.3 UNIVERSITY SERVICE ACTIVITIES

- Member, Planning and Resources Committee 2016 - 2019
- University Senator 2014 - 2017
- Service on University-level Restricted Research Committee
- Guest Lecturer and Jury Member in multiple Architecture Studio classes for W. Lesnikowsky
- Assisted multiple Industrial Design projects under L. Rake
- Collaborated with W. Meyer on Engineering Entrepreneurship Program with School of Business
- Secretary of the KU Chapter of the American Association of University Professors
- Coordinated the Investigation into Administrative Malfeasance in the Falsification of Vetted Promotion and Tenure Rules
- Coordinator of the petition to require Governance compliance with the Sunshine Laws of the State of Kansas

6.2 PROFESSIONAL SERVICE BEYOND ACADEMIA

6.2.1 ASSOCIATE EDITORSHIPS AND EDITORIAL BOARD MEMBERSHIPS

1. Editor-in-Chief, Journal of Aviation Technology
2. Editorial Board of the Journal of Aerospace Sciences and Technologies
3. Editorial Board of the Journal of Aeronautics and Aerospace Engineering
4. Associate Editor of the International Journal of Aerospace Engineering

6.2.2 TECHNICAL PAPER AND PROPOSAL REVIEWER OF ADAPTIVE AEROSTRUCTURES AND UAVS

1. American Institute of Aeronautics and Astronautics Structural Dynamics and Materials Conferences.
2. American Institute of Aeronautics and Astronautics Journal
3. American Institute of Aeronautics and Astronautics Journal of Aircraft
4. Journal of Vibration and Acoustics
5. ASME Journal of Dynamic Systems, Measurement and Control, New York, NY
6. Journal of Intelligent Material Systems and Structures, Bristol, England.
7. Journal of Smart Materials and Structures, IOP Publishing Limited, Bristol, England.
8. International Journal of Aerospace Engineering (TOAEJ)

9. Journal of Frontiers in Aerospace Engineering (FAE)
10. Journal of Materials Processing Technology
11. Journal of Mechanical Design
12. Czech Science Foundation
13. South Eastern Conference on Theoretical and Experimental Mechanics
14. 1996 International Mechanical Engineering Conference and Exposition, Atlanta, GA.

6.2.3 TECHNICAL AND STANDING COMMITTEE MEMBERSHIPS & CHAIRMANSHIPS

- American Institute of Aeronautics and Astronautics Student Activities Committee (SAC, Chair)
- American Institute of Aeronautics and Astronautics Aircraft Design Technical Committee (ADTC)
- American Institute of Aeronautics and Astronautics Adaptive Structures Technical Committee (ASTC)
- American Institute of Aeronautics and Astronautics Pre-College Committee

6.2.4 PROPOSAL REVIEWER ON ADAPTIVE AEROSTRUCTURES, MISSILES, MUNITIONS & UAVS

- Defense Experimental Program to Stimulate Competitive Research (DEPSCoR).
- National Research Council, National Materials Advisory Board, Washington, D., 20418
- US Air Force Office of Scientific Research, Bolling AFB, DC 20332
- Department of Energy, Office of Energy Research, Washington, D., 20585
- Army Research Office, Structural Mechanics Branch, Research Triangle Park, NC 27709

6.2.5 STATE-LEVEL SERVICE ACTIVITIES

- Past President American Association of University Professors (AAUP) State of Kansas Conference
- Discrimination Task Force Chairperson, KSAAUP
- Coordinator, MO-KS AAUP Joint Meeting and Fall Conference
- KSAAUP Sound Governance Award Committee Member
- Invited Lecture to BCAAUP on Defending Against Administrative Bullying, 14 November 2013
- KSAAUP Observer, Dismissal Hearing, Benedictine College, Atchison, Kansas, 6 December 2013
- Coordinator, State of Kansas First Higher Education Policy Conference

6.2.6 COMMUNITY SERVICE

Hundreds of events 1993 – present at K-12 schools, Haskell Indian Nations University, churches, Cub Scout troops & community organizations…

6.2.7 CONSULTATION, TECHNICAL ASSISTANCE, AND EXPERT WITNESS WORK FOR INTERNATIONAL LITIGATION

1. NiellTech Manufacturing, Xiamen, China, worked on support of intellectual property claims.
2. Silverlit Toy Manufactory, Hong Kong, worked on support of a large collection of patents centered on micro helicopters and the infringement of Silverlit's rights by other companies.
3. Micro-Autonomous Systems, LLC Consulting work on the convertible uninhabited aerial vehicles for the toy industry and defense, fabrication and flight testing.
4. Lutronix Corporation, Inc. Consulting work on guided munitions, fabrication and flight testing for the toy and defense industries.
5. QorTek Corporation, Williamsport, Pennsylvania Consulting work on the design of missile fin actuators was performed.

6. Schafer Corporation, Huntsville, Alabama Consulting work on the design of hypersonic interceptor and flight adaptive flight control actuator design was performed and is currently ongoing.
7. Saab Dynamics AB, Linköping, Sweden Consulting work on the design, development and testing of adaptive aerostructures for missiles and munitions was performed and is currently ongoing.
8. Aerotech Engineering and Research, Lawrence, Kansas Consulting work on the application of smart tetrahedral vortex generator placement, and applications were conducted. Consulting work on applications of smart structures and materials to inflatable smart missile wings was also performed in support of U.S. AFContract FO8630-92-C-0027.
9. Boeing/McDonnell Douglas Missile Systems, St. Louis, Missouri Smart missile fin design parameters as well as manufacturing and analysis techniques were explained in several presentations. Arrangements of aeroservoelastic surfaces including subsonic and supersonic missile fins and wings were laid out for the Tomahawk, HARM, and Phoenix. Advanced control concepts including dynamic lift enhancement and aft-fin stabilization were illustrated. A prototype smart missile fin was demonstrated.
10. Corporate Headquarters, General Dynamics, St. Louis, Missouri Presentations were delivered in support of newly acquired rights to U.S. Patent 5,440,193 on directionally attached piezoelectric (DAP) actuator elements for smart structures. The presentations outlined the operating principles and analysis techniques. Several beam specimens as well as the first smart missile fin were demonstrated.
11. Defense Initiatives Office, General Dynamics, Washington, D. The fundamentals of DAP analysis, design and manufacturing techniques were laid out for various types of weapon systems and platforms. Assistance on a proprietary study of brilliant weapon systems and nanostructures was given.
12. Convair Division, General Dynamics, San Diego, California The fundamentals of integrating smart structures and materials into the Tomahawk missile were delivered. The first smart missile wing was demonstrated. Performance enhancement estimations showed substantial improvements in operational characteristics.
13. Valley Systems Division, Ontario, and Data Systems Division, Pomona, California, General Dynamics Presentations on smart structures applications on the Stinger missile were delivered. The applications included seeker assembly and platform stabilization as well as smart missile fin integration.
14. Fort Worth Division, General Dynamics, Fort Worth, Texas The stealth enhancement properties of active/solid state flight control were explained. An evaluation of the suitability of smart structures to the A-12 and future advanced aircraft was conducted. (Mr. Michael Love (817) 777-2141 and Mr. William Rogers
15. The University of Maryland, College Park Consulting in support of the DAP patent prosecution was conducted.

6.2.8 SELECTED INTERNATIONAL CONFERENCES ORGANIZED

1. Co-Organizer, Smart Materials and Nanostructures, Weihai, China July 2009.
2. Co-Organizer, ASME Smart Materials Adaptive Structures and Intelligent Systems, October 2008, Baltimore, MD.
3. Co-Organizer and Program Committee Member for the First European Micro Air Vehicle Conference and Flight Competition, EMAV 2004, Braunschweig, Germany, sponsored by the German Institute of Navigation, Deutscher Aero Club, e.V., Deutsche Gesellschaft für Luft-und Raumfahrt – Lilienthal-Oberth e.V. (DGLR), July 2003.
4. Co-Organizer for Aero India 2001Technical Seminar on "Unmanned Air Vehicles – Emerging Technologies," Bangalore, India 7 – 9 February 2001.
5. Co-Organizer for the Society of Photo-Optical Instrumentation Engineers First Annual Far East and Pacific Rim Conference on Smart Materials and Structures, and Micro-Electromechanical Machines, Bangalore, India, 7 - 10 July 1999.
6. Co-Organizer for the 4th European Conference on Smart Structures and Materials, Harrogate, UK, 6 - 8 July 1998,
7. Co-Organizer for the Society of Photo-Optical Instrumentation Engineers First Annual Far East and Pacific Rim Conference on Smart Materials and Structures, and Micro-Electromechanical Machines, Bangalore, India, 11 - 14 December 1996.

6.2.9 SELECTED INTERNATIONAL CONFERENCE SESSIONS CHAIRED

1. Session Chair of many, Many AIAA conferences… (too many to keep track of)
2. Session Chair for the Smart Structures and Integrated Systems Conference of the Society of Photo-Optical Instrumentation Engineers 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, March, 2003.
3. Session Chair for the Adaptive Composites Session in the International Conference on Composites Engineering, New Orleans, Louisiana, August 21 - 24, 1994.
4. Session Chair for the Aircraft Applications in the Smart Structures and Integrated Systems Conference (3329) of the SPIE 5th Annual International Symposium on Smart Structures and Materials, Monday, 2 March 1998 (for T. Weisshaar).

6.2.10 DESCRIPTION OF INTERNATIONAL EXTENSION PROGRAM

My international extension program is in full swing and has been underway for years. The major thrust is through extension teaching of my short courses on adaptive aerostructures and Subscale Convertible UAV Design. Short courses and invited lectures have been delivered to many international corporations and Government agencies, including:

- Saab Aircraft Corporation
- Rolls-Royce Military Aero Engines
- Singapore Technologies Engineering
- Indian Ministry of Defense
- British Ministry of Defense
- Royal Air Force
- Universität Stuttgart
- Bofors Corporation
- Swedish Ministry of Defense
- British Aerospace
- The Royal Netherlands Air Force
- Aeronautical Society of India
- German Ministry of Defense
- German Army
- GEC-Marconi
- General Dynamics
- NASA
- Boeing
- US Navy
- US Air Force
- DARPA
- DASA
- Raytheon Corporation
- US Army

7. REFERENCES

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