Appendix A

Employer Needs Survey Summary and Submissions

	A	B	C	D	E	F	G	H	I
1	**Company**		**Contact**						
2	**Name**	**Type**	**Name**	**Title**	**Email**	**Phone**	**Would you give hiring preference to applicants with the proposed degree?**	**Would you give hiring preference to applicants with a concentration in Business Data Analytics?**	**Would you give hiring preference to applicants with a concentration in Data Science Statistics?**
3	Sightline Retail	Management and Consulting	Rachel Harris	New Business Development	r.harris@sightlineretail.com	479.696.8882	Yes	Yes	Yes (if there were business classes taken as well)
4									
5									
6	Tyson Foods, Inc.	Food Industry	Dawn Drewry	VP IT	dawn.drewry@tyson.com		Yes	Yes	Yes
7									
8									
9	Rock Analytics	Consulting: Visual Analytics	Elizabeth Phillips	Owner	a.elizabeth.phillips@gmail.com	501.626.3871	Maybe	Maybe	Yes
10									
11									
12									
13									
14									
15	Walmart	Retailer	Brandi Joplin	SVP, Global Audit	Brandi.Joplin@walmart.com	479.204.8561	Maybe	Maybe	Maybe
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27	@OneStoneEconmm		Meagan Kinmonth Bowman	CIO and Co-Founder	kbranca@onlyonestone.com / MBowman@onlyonestone.com	314.495.7629	Maybe	Maybe	Yes
28									
29									
30									
31									
32	JB Hunt	Transportation & Logistics	Douglas Mettenburg	VP Engineering & Technology	douglas.mettenburg@jbhunt.com	479.685.7598	Yes	Yes	Yes
33									
34									

	A	B	J	K	L	M	N
1	**Company**						
2	**Name**	**Type**	**Would you give hiring preference to applicants with a concentration in Social Data Science, emphasizing social impacts of data analytics?**	**Would you give hiring preference to applicants with a concentration in Computational Analytics?**	**Would you give hiring preference to applicants with a concentration in Bioinformatics?**	**Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?**	**Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?**
3	Sightline Retail	Management and Consulting	No (but it's possible we do not fully understand this (concentration) and the pplication in a business environment)	Yes	No	Yes -- absolutely, as our first preference altogether	
4							
5							
6	Tyson Foods, Inc.	Food Industry	Yes	Yes	Yes	Yes	
7							
8							
9	Rock Analytics	Consulting: Visual Analytics	Yes	Maybe	Maybe	No	
10							
11							
12							
13							
14							
15	Walmart	Retailer	Maybe	Maybe	No	Yes	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27	@OneStoneEconmm		No	No	No	Yes	
28							
29							
30							
31							
32	JB Hunt	Transportation & Logistics	Maybe	Maybe	Maybe	Yes	
33							
34							

	A	B	O	P	Q	R	S	T
1	**Company**							
2	**Name**	**Type**	**Would you give hiring preference to applicants with a concentration in Geospatial Data Analytics?**	**Would you give hiring preference to applicants with a concentration in Operations Analytics?**	**Would you give hiring preference to applicants with a concentration in Operations Analytics?**	**Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program?**	**Would your organization provide tuition assistance?**	**Please select any days/times and mediums that would be helpful for your employee for classes**
3	Sightline Retail	Management and Consulting				Our employees already have degrees ("No")	Maybe	
4								
5								
6	Tyson Foods, Inc.	Food Industry				40 ("Yes")	X	Evenings, Weekends, In-Person, Online
7								
8								
9	Rock Analytics	Consulting: Visual Analytics				N/A ("No")	No	
10								
11								
12								
13								
14								
15	Walmart	Retailer						
16								
17								
18								
19								
20								
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24								
25								
26								
27	@OneStoneEconmm					2 ("Yes")	Maybe	Weekends Preference, In-Person Preference
28								
29								
30								
31								
32	JB Hunt	Transportation & Logistics				2 -- 5 ("Yes")	Yes	Evenings & Weekends Preference & Helpful; In-Person & Online Preference & Helpful
33								
34								

	A	B	U	V	W
1	**Company**				
2	**Name**	**Type**	**Select any of the types of support your company is willing to provide for this degree program**	**Would a senior-level representative of your company be willing to be a member of our advisory committee? If so, who?**	**How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will**
3	Sightline Retail	Management and Consulting	On-Site Internships, Part-Time Faculty, Real world data and problems for instructional and practicum use	Yes. bedore@sightlineretail.com	
4					
5					
6	Tyson Foods, Inc.	Food Industry	On-Site Internships, Part-Time Faculty, Tuition Reimbursement, Real world data and problems for instructional and practicum use	Yes. Dawn.drewry@tycon.com	Locally, there is a tremendous need for analytical talent in Northwest Arkansas. A local source for this talent would benefit this region greatly. Within Tyson, this skillset will help the company optimize productivity and improve animal wellbeing. Within our state as well as nationally, data science will help reduce natural resource consumption such as water, fuel and food waste. Data Science helps corporations reduce costs by optimizing business systems, re-allocating/optimizing human capital and discover previously unknown solutions to business problems that drive the enterprise forward.
7					
8					
9	Rock Analytics	Consulting: Visual Analytics		No.	
10					
11					
12					
13					
14					
15	Walmart	Retailer			
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26					
27	@OneStoneEconmm		On-Site Internships, Part-Time Faculty, Tuition Reimbursement, Employee Release Time, Equipment, Real world data and problems for instructional and practicum use	Yes. Meagan Kinmonth Bowman	
28					
29					
30					
31					
32	JB Hunt	Transportation & Logistics	On-Site Internships, Tuition Reimbursement, Employee Release Time, Real world data and problems for instructional and practicum use	Yes. Douglas Mettenburg	By providing more entry-level analytical talent to the region. There is currently a shortage of analytical talent nationwide. By granting this program we will benefit by being able to bring on skilled analytical talent into our recruiting pipeline and grow the talent. This benefits all employers in the local area, region, and State. Also, by investing in growing talent locally, the students are more likely to want to stay local rather than leave. This makes recruiting easier.
33					
34					

	A	B	X	Y	Z	AA
1	**Company**					
2	**Name**	**Type**	**Provide any additional comments about this degree program and concentrations.**	**Title**	**Degree Req'd?**	**Certification or Licensure Req'd?**
3	Sightline Retail	Management and Consulting		Replenishment Lead	Yes	No
4				Analytics/Forecasting Lead	Yes	No
5						
6	Tyson Foods, Inc.	Food Industry	Tyson would prefer the ability to take advantage of a skillset around Python and R as well as a cloud-based background. Regarding modeling preferences, we will leverage the basic models (Linear Regression, Clustering etc.) but we will increasingly make use of Artificial Neural Networks using libraries such as Tensorflow and Keras. The Tyson data science skillset will also leverage knowledge around Computer Vision and Edge Computing. We would also benefit from a program grounded in practical application of real world business problems and solutions. There would also be benefit in collaborating with the University on Data Science Internships. This provides valuable real-world experience for the students as well as partnership between Tyson and the University's Data Science program.	Data Scientists	Yes	No
7				Data Analysts	Yes	No
8						
9	Rock Analytics	Consulting: Visual Analytics		Visual Analyst	Economics, Statistics, Mathematics, Information Management	Experience Working in Tableau, Microsoft Power BI
10				Developer, Coding Expert	Computer Science, Statistics	Adept at queries (SQL), Experience or familiarity with R, Python, and/or Julia
11						
12						
13						
14						
15	Walmart	Retailer		Data Scientist	BA + 2 yrs or MA + 1 yr	
16				Manager, Data Scientist	BA + 5 yrs or MA + 2 yrs	
17				Senior Data Scientist	BA + 5 yrs or MA + 2 yrs	
18				Staff Data Scientist	BA + 5 yrs or MA + 3 yrs	
19				Sr Manager, Data Scientist	BA + 5-6 yrs or MA + 3-4 yrs or PhD	
20				Principal Data Scientist	BA + 6 yrs or MA +4 yrs or PhD	
21				Director, Data Scientist	BA +7 yrs or MA + 5 yrs or PhD	
22				Distinguished Data Scientist	BA +7 yrs or MA + 5 yrs or PhD	
23				Sr Director, Data Scientist	BA + 8 yrs or MA + 6 yrs	
24				Distingusished Architect, Data Scientist	BA + 8 yrs or MA + 6 yrs	Big Data analytics experience
25						
26						
27	@OneStoneEconmm			Assistant Data Scientist	Yes	
28				Data Analyst	Yes	
29				Data Entry Engineer	Yes	
30						
31						
32	JB Hunt	Transportation & Logistics	A thorough understanding of algorithms and statistical analysis would be something we are loking for. Too many times, we have interviewed perspective employees who understand a software package vs. model validation and the underlying mechanics of the models. Also, of interest to us is getting exposure to some of the gibber open source platforms such as R & Python. Many programs focus on only large enterprise vendors such as SPSS, SAS, etc. Whe we do utilize IBM tech, we are also doing cutting-edge work with Python and exposure to Python would be useful to us.	In the position titles below, there is the opportunity for growth through (what is described as a "dual career ladder") with technical titles and also analagous management titles such as: Manager, Sr. Manager, and Director for Managing IT (technical side of management) and also for Managing the Business and Driving the Business (business side of management). The opportunity for these is to be able to combine both technical and business.		
33				Master Data Scientist	Masters	
34				Sr. Expert Data Scientist	Masters	

	A	B	AB	AC	AD	AE	AF	AG	AH	AI
1	**Company**		**Job**							
2	**Name**	**Type**	**# Positions Currently Filled**	**# of Positions Currently Open**	**# of Positions per Year Available in Next 2-5 Years**	**# of Positions per Year Available in Next 6-10 Years**	**Average Starting Annual Salary**	**Average Annual Salary Increase**	**Evaluating the quality of data**	**Collecting data via research techniques**
3	Sightline Retail	Management and Consulting	2	0	5	10	$ 70,000		X	X
4			2	0	5	10	$ 100,000		X	X
5										
6	Tyson Foods, Inc.	Food Industry	2	3	3	7	$ 95,000	3-5%	X	X
7			30	5	10	12	$ 70,000	3-5%	X	X
8										
9	Rock Analytics	Consulting: Visual Analytics	1	0	1	?			X	
10			1	0	1	?			X	
11										
12										
13										
14										
15	Walmart	Retailer	36	6					X	X
16			2	0					X	X
17			37	5					X	X
18			28	10					X	X
19			11	1						
20			18	4					X	X
21			7	0					X	X
22			6	2						
23			4	0						
24			2	0					X	X
25										
26										
27	@OneStoneEconmm		1	0	3	3	$ 60,000	Cost of Living + performance	X	X
28			2	0	3	3	$ 50,000	Cost of Living + performance		X
29			2	1	2	2	$ 45,000	Cost of Living + performance	X	X
30										
31										
32	JB Hunt	Transportation & Logistics								
33			1	0	0	0	$ 150,000	3%	X	X
34			0	0	0	1		3%	X	X

	A	B	AJ	AK	AL	AM	AN	AO	AP	AQ
1	**Company**		**Skills Required for employment in the position**							
2	**Name**	**Type**	**Understanding and rigorously analyzing data using relevant software packages**	**Applying data science theories to understand the data and make predictions**	**Communicating findings in writing**	**Communicating findings via public speaking**	**Communicating findings via graphical and visualization techniques**	**Applying critical thinking skills to solve novel challenges**	**Generalizing knowledge from one subject area to another using data science**	**Working in a team-based environment**
3	Sightline Retail	Management and Consulting	X	X	X	X	X	X	X	X
4			X	X	X	X	X	X	X	X
5										
6	Tyson Foods, Inc.	Food Industry	X	X	X	X	X	X	X	X
7			X		X	X	X	X	X	X
8										
9	Rock Analytics	Consulting: Visual Analytics	X	X	X	X	X	X		
10			X				X			
11										
12										
13										
14										
15	Walmart	Retailer	X	X	X	X	X	X	X	X
16			X	X	X	X	X	X	X	X
17			X	X	X	X	X	X	X	X
18			X	X	X	X	X	X	X	X
19										
20			X	X	X	X	X	X	X	X
21			X	X	X	X	X	X	X	X
22										
23										
24			X	X	X	X	X	X	X	X
25										
26										
27	@OneStoneEconmm		X	X		X			X	
28			X							X
29										X
30										
31										
32	JB Hunt	Transportation & Logistics								
33			X	X	X	X	X	X	X	X
34			X	X	X	X	X	X	X	X

	A	B	AR	AS	AT	AU	AV	AW
1	**Company**							
2	**Name**	**Type**	**Project management skills and leading teams**	**Management of databases**	**Data cleansing, processing, and wrangling**	**Relevant work or internship experience**	**Data privacy, security, and ethics**	**Data Science applied to business and economics in an organizational setting**
3	Sightline Retail	Management and Consulting	X	X	X	X	X	X
4			X	X	X	X	X	X
5								
6	Tyson Foods, Inc.	Food Industry			X		X	X
7					X		X	
8								
9	Rock Analytics	Consulting: Visual Analytics						
10								
11								
12								
13								
14								
15	Walmart	Retailer		X	X	X	X	X
16			X	X	X	X	X	X
17				X	X	X	X	X
18				X	X	X	X	X
19								
20			X	X	X	X	X	X
21			X	X	X	X	X	X
22								
23								
24			X	X	X	X	X	X
25								
26								
27	@OneStoneEconmm					X		X
28					X	X		
29				X			X	
30								
31								
32	JB Hunt	Transportation & Logistics						
33			X		X	X		X
34			X		X	X		X

	A	B	C	D	E	F	G	H	I
1	**Company**		**Contact**						
2	**Name**	**Type**	**Name**	**Title**	**Email**	**Phone**	**Would you give hiring preference to applicants with the proposed degree?**	**Would you give hiring preference to applicants with a concentration in Business Data Analytics?**	**Would you give hiring preference to applicants with a concentration in Data Science Statistics?**
35									
36									
37									
38									
39									
40									
41	Metova, Inc.	Professional Services	Kent Watson	VP Technology	kent.watson@metova.com	479.200.1379	Yes	Yes	Yes
42									
43									
44									
45									
46	First Orion	For Profit	Allison Nicholas	Director of Recruiting	anicholas@firstorion.com	501.269.4119	Maybe	Maybe	Maybe
47									
48									
49									
50									
51	Movista, Inc.	Technology - Software as a Service (SaaS)	Allyson Malone	Director of People	Allyson@movista.com	479.445.8989	Yes	Maybe	Yes
52									
53									
54									
55									
56									
57									
58	Rock Region Metro	Mixed Mode Transit System	Greg Williamson	Manager - HR	gwilliamson@rrmetro.org	501.375.6717 (x257)	Maybe	Maybe	Maybe
59									
60									
61	DXC Technology	Professional Services	Alan Allgaier	Healthcare Analytics Delivery Manager	aallgaier@dxc.com	248.495.8107	Yes	Yes	Maybe

	A	B	J	K	L	M	N
1	**Company**						
2	**Name**	**Type**	**Would you give hiring preference to applicants with a concentration in Social Data Science, emphasizing social impacts of data analytics?**	**Would you give hiring preference to applicants with a concentration in Computational Analytics?**	**Would you give hiring preference to applicants with a concentration in Bioinformatics?**	**Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?**	**Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?**
35							
36							
37							
38							
39							
40							
41	Metova, Inc.	Professional Services	Yes	Maybe	Maybe	Maybe	Maybe
42							
43							
44							
45							
46	First Orion	For Profit	Maybe	Maybe	No	No	No
47							
48							
49							
50							
51	Movista, Inc.	Technology - Software as a Service (SaaS)	Maybe	Yes	No	No	No
52							
53							
54							
55							
56							
57							
58	Rock Region Metro	Mixed Mode Transit System	Maybe	Maybe	No	Yes	No
59							
60							
61	DXC Technology	Professional Services	No	Maybe	Yes	No	Yes

	A	B	O	P	Q	R	S	T
1	**Company**							
2	**Name**	**Type**	**Would you give hiring preference to applicants with a concentration in Geospatial Data Analytics?**	**Would you give hiring preference to applicants with a concentration in Operations Analytics?**	**Would you give hiring preference to applicants with a concentration in Operations Analytics?**	**Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program?**	**Would your organization provide tuition assistance?**	**Please select any days/times and mediums that would be helpful for your employee for classes**
35								
36								
37								
38								
39								
40								
41	Metova, Inc.	Professional Services				10 ("Yes")	Maybe	Evenings Helpful; Online Helpful
42								
43								
44								
45								
46	First Orion	For Profit				0 ("No")	No	Evenings & Weekends Helpful & Preferred; Online Helpful & Preference
47								
48								
49								
50								
51	Movista, Inc.	Technology - Software as a Service (SaaS)				10 to 15 ("Yes")	Yes	Days Helpful; Evenings & Weekends Preference
52								
53								
54								
55								
56								
57								
58	Rock Region Metro	Mixed Mode Transit System				2 to 5 ("Yes")	Maybe	Evenings & Weekends Preference; Online Helpful & Preference
59								
60								
61	DXC Technology	Professional Services					Maybe	Evenings & Weekends Helpful & Preference; Online Helpful & Preference; In-Person Helpful

	A	B	U	V	W
1	**Company**				
2	**Name**	**Type**	**Select any of the types of support your company is willing to provide for this degree program**	**Would a senior-level representative of your company be willing to be a member of our advisory committee? If so, who?**	**How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will**
35					
36					
37					
38					
39					
40					
41	Metova, Inc.	Professional Services	On-Site Internships, Employee Release Time, Equipment	Yes. kent.watson@metova.com	The data science field is blowing up in the business and technology industry. Arkansas, particularly Northwest Arkansas, has been playing catchup in many areas around developing technology talent. We have a major talent gap in terms of the number of positions open and the number of graduates to fill those positions. Adding a Data Science program at the U of A would help make Northwest Arkansas known as a regional hub for producing IT talent. Additionally, creating a local talent pool will help fill jobs here in NWA vs. in other states or countries. The large employers who need this skillset will hire it where they can find it. Growing and hiring talent here will help further economic development in NWA.
42					
43					
44					
45					
46	First Orion	For Profit	On-Site Internships, Employee Release Time, Real world data and problems for instructional and practicum use		
47					
48					
49					
50					
51	Movista, Inc.	Technology - Software as a Service (SaaS)	Program Start-Up Funds, On-Site Internships, Tuition Reimbursement, Employee Release Time, Real world data and problems for instructional and practicum use	Yes. Joel.Sporleder@movista.com	This program would benefit us through creating a currently unavailable workforce, opening the door to a new economic stream, and also position us to become the known experts in a rapidly evolving field. In addition to creating new opportunities for employees and employer, this degree would lessen the need to "look elsewhere" for solutions to field related challenges.
52					
53					
54					
55					
56					
57					
58	Rock Region Metro	Mixed Mode Transit System	Real world data and problems for instructional and practicum use	Yes. gwilliamson@rrmetro.org	
59					
60					
61	DXC Technology	Professional Services			We have a delivery center in Conway. I could move Data Scientist work there if there were a concentration of people there who are qualified.

	A	B	X	Y	Z	AA
1	**Company**					
2	**Name**	**Type**	**Provide any additional comments about this degree program and concentrations.**	**Title**	**Degree Req'd?**	**Certification or Licensure Req'd?**
35				Expert Data Scientist	Masters	
36				Sr. Data Scientist	Bachelors	
37				Data Scientist	Bachelors	
38				Sr. Associate Data Scientist	Bachelors	
39				Associate Data Scientist	Bachelors	
40						
41	Metova, Inc.	Professional Services		Data Engineer	Bachelors	None
42				Machine Learning Engineer	Bachelors	None
43				Data Scientist	Masters	None
44				Business Analyst	Bachelors	None
45						
46	First Orion	For Profit		Data Scientist	Bachelors	None
47				Data Science Apprenticeship	Bachelors	None
48				Data Analyst Apprenticeship	Bachelors	None
49						
50						
51	Movista, Inc.	Technology - Software as a Service (SaaS)	We are very excited about the potential of this program. Plese let us know what we could possibly do to help.	Director of Data Insights	Bachelors	None
52				Data Science Engineer	Bachelors	None
53				Data Analytics Engineer	Bachelors	None
54				Machine Learning Engineer	Bachelors	None
55				Behavioral Science Analyst (Human Computer Interaction)	Bachelors	None
56						
57						
58	Rock Region Metro	Mixed Mode Transit System	This degree program could supplement preferred degrees in urban and transportation planning.	Transit Planner	Bachelors	
59				Planning and Safety Officer	Bachelors	
60						
61	DXC Technology	Professional Services	There is no such thing as a Data Scientist "in the abstract." One needs to be knowledgeable about the business of something. Your 6-point "outcomes" introductory page was silent on that. The best bet for students is to take a minor ina field of interest that they want to perform their craft in, such as business, or healthcare, or engineering, etc., and not just be a pure technician.	Data Scientist	Masters & above	None

	A	B	AB	AC	AD	AE	AF	AG	AH	AI
1	**Company**		**Job**							
2	**Name**	**Type**	**# Positions Currently Filled**	**# of Positions Currently Open**	**# of Positions per Year Available in Next 2-5 Years**	**# of Positions per Year Available in Next 6-10 Years**	**Average Starting Annual Salary**	**Average Annual Salary Increase**	**Evaluating the quality of data**	**Collecting data via research techniques**
35			1	0	0	1	$ 120,000	3%	X	X
36			1	1	1	1	$ 100,000	3%	X	X
37			1	1	2	2	$ 90,000	3%	X	
38			1	0	0	0	$ 80,000	3%	X	
39			2	0	3	3	$ 70,000	3%	X	
40										
41	Metova, Inc.	Professional Services	0	0	5	20	$ 60,000	5%	X	
42			0	0	5	20	$ 60,000	5%	X	
43			1	0	2	10	$ 70,000	5%	X	X
44			1	0	2	6	$ 50,000	5%	X	
45										
46	First Orion	For Profit	4	1	1	1	$ 104,000		X	X
47			4	0	1	1	$ 70,000		X	X
48			1	0	1	1	$ 56,000		X	X
49										
50										
51	Movista, Inc.	Technology - Software as a Service (SaaS)	0	1	0	1	$ 150,000	5 - 10%	X	
52			0	1 to 2	1	2	$ 120,000	5 - 10%	X	X
53			0	1 to 2	1	2	$ 100,000	5 - 10%	X	X
54			0	1 to 2	1	2	$ 110,000	5 - 10%	X	X
55			0	1 to 2	1	2	$ 120,000	5 - 10%		X
56										
57										
58	Rock Region Metro	Mixed Mode Transit System	1	0	0		$ 55,000	3%	X	X
59			0	0	1		$ 90,000	3%	X	X
60										
61	DXC Technology	Professional Services	Confidential	Confidential	Confidential	Confidential	Confidential	Confidential	X	X

	A	B	AJ	AK	AL	AM	AN	AO	AP	AQ
1	**Company**		**Skills Required for employment in the position**							
2	**Name**	**Type**	**Understanding and rigorously analyzing data using relevant software packages**	**Applying data science theories to understand the data and make predictions**	**Communicating findings in writing**	**Communicating findings via public speaking**	**Communicating findings via graphical and visualization techniques**	**Applying critical thinking skills to solve novel challenges**	**Generalizing knowledge from one subject area to another using data science**	**Working in a team-based environment**
35			X	X	X	X	X	X	X	X
36			X	X	X	X	X	X	X	X
37			X	X	X	X	X			X
38			X	X	X	X	X			X
39			X	X	X	X	X			X
40										
41	Metova, Inc.	Professional Services	X		X			X	X	X
42			X		X		X	X	X	X
43			X		X	X	X	X	X	X
44					X			X	X	X
45										
46	First Orion	For Profit	X	X	X	X	X	X	X	X
47			X	X	X	X	X	X	X	X
48			X		X	X	X	X	X	X
49										
50										
51	Movista, Inc.	Technology - Software as a Service (SaaS)	X	X	X		X	X	X	X
52			X	X	X		X	X	X	X
53			X				X	X	X	X
54			X	X				X	X	X
55			X		X		X	X	X	X
56										
57										
58	Rock Region Metro	Mixed Mode Transit System	X	X	X	X	X	X	X	X
59			X	X	X	X	X	X	X	X
60										
61	DXC Technology	Professional Services	X	X	X	X	X	X		

	A	B	AR	AS	AT	AU	AV	AW
1	**Company**							
2	**Name**	**Type**	**Project management skills and leading teams**	**Management of databases**	**Data cleansing, processing, and wrangling**	**Relevant work or internship experience**	**Data privacy, security, and ethics**	**Data Science applied to business and economics in an organizational setting**
35			X		X	X		X
36					X	X		X
37					X	X		
38					X			
39					X			
40								
41	Metova, Inc.	Professional Services		X	X	X	X	X
42				X	X	X	X	X
43			X	X	X	X	X	X
44			X					X
45								
46	First Orion	For Profit	X	X	X	X	X	X
47			X	X	X	X	X	X
48			X	X	X	X	X	X
49								
50								
51	Movista, Inc.	Technology - Software as a Service (SaaS)	X			X		X
52				X	X	X	X	X
53				X	X	X	X	X
54				X	X		X	X
55						X		X
56								
57								
58	Rock Region Metro	Mixed Mode Transit System	X	X	X	X	X	X
59			X	X	X	X	X	X
60								
61	DXC Technology	Professional Services			X	X		X

B.S. Data Science Degree Program

The University of Arkansas Bachelor of Science in Data Science major will prepare students for a successful career in data science with a solid amalgamation of given capabilities:

- an ability to demonstrate use of information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, bioinformatics, and data analysis and visualization,

- an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

- an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

- an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

- an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: Sightline Retaile_____
- Type of Company: Management and Consulting_____
- Contact Person: Rachel Harris _____
- Position Title: New Business Development _____
- Email: r.harris@sightlineretail.com_____
- Phone: 479-696-8882_____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 Replenishment Lead_____
- Job Title 2 Analytics/Forecasting Lead_____
- Job Title 3: _____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Yes	No	2	0	5	10	70,000	
Job Title 2	Yes	No	2	0	5	10	100,000	
Job Title 3								
Job Title 4								
Job Title 5								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								
Job Title 10								

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	x	X	x	x	x	x	x	x
Job Title 2	x	x	x	x	x	x	x	x
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	x	x	x	x	x	x	x	x
Job Title 2	x	x	x	x	x	x	x	x
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

X Yes

○ Maybe

○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

X Yes

○ Maybe

○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

xYes (if there were business classes taken as well)

○ Maybe

○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

○ Yes

○ Maybe

xvNo- but its possible we don't fully understand this degree and the application in a business environment

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

xvYes

○ Maybe

○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

○ Yes

○ Maybe

xNo

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

xYes –absolutely, as our first preference altogether.

○ Maybe

○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? (our employees already have degrees, so unclear on what this question is asking?)_____

7. Would your organization provide tuition assistance?

○ Yes
X Maybe

○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☐	☐	☐	☐
Preference	☐	☐	☐	☐	☐

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

☐ Program Start-Up Funds
X On-site Internships
X Part-Time Faculty

☐ Tuition Reimbursement

☐ Employee Release Time

☐ Equipment
X Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

X Yes, I will. Please provide preferred email:
bedores@sightlineretail.com_____

○ Yes, they would. Please provide preferred email: _____

○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

_____

_____

_____

_____

_____

12. Provide any additional comments about this degree program and concentrations.

_____

Please return completed surveys by ***Friday, September 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

B.S. Data Science Degree Program

The University of Arkansas Bachelor of Science in Data Science major will prepare students for a successful career in data science with a solid amalgamation of given capabilities:

- an ability to demonstrate use of information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, bioinformatics, and data analysis and visualization,

- an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

- an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

- an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

- an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: Tyson Foods Inc_____
- Type of Company: _Food Industry_____
- Contact Person: _Dawn Drewry_____
- Position Title: __VP IT_____ _____
- Email: __dawn.drewry@tyson.com_____
- Phone: _____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 Data Scientists_____
- Job Title 2 Data Analysts_____
- Job Title 3 _____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Data Scientist	Yes	No	2	3	3	7	95000	3-5%
Data Analyst\Citizen Data Scientist	Yes	No	30	5	10	12	70000	3-5%
Job Title 3								
Job Title 4								
Job Title 5								

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Data Scientist	X	X	X	X	X	X	X	X
Data Analyst\Citizen Data Scientist	X	X	X	☐	X	X	X	☐
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Data Scientist	X	X	☐	☐	X	☐	X	X
Data Analyst\Citizen Data Scientist	X	X	☐	☐	X	☐	X	☐
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

X - Yes

○ Maybe

○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

X - Yes

○ Maybe

○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

X - Yes

○ Maybe

○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

X - Yes

○ Maybe

○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

X - Yes

○ Maybe

○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

X - Yes

○ Maybe

○ No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

X - Yes

○ Maybe

○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? __40_____

7. Would your organization provide tuition assistance?

X - Yes

○ Maybe

○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	X	X	X	X
Preference	☐	☐	☐	☐	X

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

☐ Program Start-Up Funds

X - On-site Internships

X - Part-Time Faculty

X - Tuition Reimbursement

☐ Employee Release Time

☐ Equipment

X - Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

○ Yes, I will. Please provide preferred email: _____

X - Yes, they would. Please provide preferred email: _dawn.drewry@tyson.com_____

○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

Locally, there is a tremendous need for analytical talent in Northwest Arkansas. A local source for this talent would benefit this region greatly.

Within Tyson, this skillset will help the company optimize productivity and improve animal wellbeing.

Within our state as well as nationally, data science will help reduce natural resource consumption such as water, fuel and food waste.

Data Science helps corporations reduce costs by optimizing business systems, re-allocating/optimizing human capital and discover previously unknown solutions to business problems that drive the enterprise forward.

_____

12. Provide any additional comments about this degree program and concentrations.

Tyson would prefer the ability to take advantage of a skillset around Python and R as well as a cloud-based background.

Regarding modeling preferences, we will leverage the basic models (Linear Regression, Clustering etc.) but we will increasingly make use of Artificial Neural Networks using libraries such as Tensorflow and Keras.

The Tyson data science skillset will also leverage knowledge around Computer Vision and Edge Computing

We would also benefit from a program grounded in practical application of real world business problems and solutions.

There would also be benefit in collaborating with the University on Data Science Internships. This provides valuable real-world experience for the students as well as partnership between Tyson and the Universities Data Science program.

Please return completed surveys by ***Friday, September 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

B.S. Data Science Degree Program

The University of Arkansas Bachelor of Science in Data Science major will prepare students for a successful career in data science with a solid amalgamation of given capabilities:

- an ability to demonstrate use of information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, bioinformatics, and data analysis and visualization,

- an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

- an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

- an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

- an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: Rock Analytics
- Type of Company: Consulting: Visual Analytics
- Contact Person: Elizabeth Phillips
- Position Title: Owner
- Email: a.elizabeth.phillips@gmail.com
- Phone: 501.626.3871

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 Visual Analyst
- Job Title 2 Developer, Coding Expert
- Job Title 3 _____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Economics, Statistics, Mathematics, Information Management	Experience Working in Tableau, Microsoft Power BI	1	0	1	?		
Job Title 2	Computer Science, Statistics	Adept at queries (SQL), Experience or familiarity with R, Python, and/or Julia	1	0	1	?		
Job Title 3								
Job Title 4								

Job Title 5								
	Degree Required	**Certification or Licensure Required**	**# of Positions Currently Filled**	**# of Positions Currently Open**	**# of Positions per Year Available in Next 2-5 Years**	**# of Positions per Year Available in Next 6-10 Years**	**Average Starting Annual Salary**	**Average Annual Salary Increase**
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								

Job Title 10								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critica thinking skills to solve novel challenges
Job Title 1	☐ X	☐	☐ X	☐ X	☐ X	☐ X	☐ X	☐ X
Job Title 2	☐ X	☐	☐ X	☐ X	☐	☐	☐	☐ X
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 2	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

- ○ Yes
- ○ **Maybe X**
- ○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- ○ Yes
- ○ **Maybe X**
- ○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- ○ **Yes X**
- ○ Maybe
- ○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- ○ **Yes X**
- ○ Maybe
- ○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- ○ Yes
- ○ **Maybe X**
- ○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- ○ Yes
- ○ **Maybe X**
- ○

○ No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

○ Yes

○ Maybe

○ **No X**

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? N/A_____

7. Would your organization provide tuition assistance?

○ Yes

○ Maybe

○ **No X**

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☐	☐	☐	☐
Preference	☐	☐	☐	☐	☐

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

- ☐ Program Start-Up Funds
- ☐ On-site Internships
- ☐ Part-Time Faculty
- ☐ Tuition Reimbursement
- ☐ Employee Release Time
- ☐ Equipment
- ☐ Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

- ○ Yes, I will. Please provide preferred email: _____
- ○ Yes, they would. Please provide preferred email: _____
- ○ **No X**

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

_____

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_____

12. Provide any additional comments about this degree program and concentrations.

_____

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Please return completed surveys by ***Friday, September 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

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- an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

- an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

- an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

- an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: _____Walmart Inc._____
- Type of Company: _____Retailer_____
- Contact Person: _____Brandi Joplin_____
- Position Title: _____SVP, Global Audit_____
- Email: _____Brandi.Joplin@walmart.com_____
- Phone: _____479.204.8561_____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 ___Data Scientist_____
- Job Title 2 ___Manager, Data Scientist_____
- Job Title 3 ___Senior Data Scientist_____
- Job Title 4 ___Staff Data Scientist_____
- Job Title 5 ___Sr Manager, Data Scientist_____
- Job Title 6 ___Principal Data Scientist_____
- Job Title 7 ____Director, Data Scientist_____
- Job Title 8 ____Distinguished Data Scientist_____
- Job Title 9 _____Sr Director, Data Scientist_____
- Job Title 10 _____Distinguished Architect Data Scientist_____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Data Scientist	BA + 2 years; or MA + 1		36	6				
Manager, Data Scientist	BA + 5 years; or MA + 2		2	0				
Senior Data Scientist	BA + 5 years; or MA + 2		37	5				
Staff Data Scientist	BA + 5 years; or MA + 3		28	10				

Sr Manager, Data Scientist	BA + 5-6 years; or MA + 3-4; or PhD		11	1				
Principal Data Scientist	BA + 6 years; or MA + 4; or PhD		18	4				
Director, Data Scientist	BA + 7 years; or MA + 5; or PhD		7	0				
Distinguished Data Scientist	BA + 7 years; or MA + 5; or PhD		6	2				
Sr Director, Data Scientist	BA + 8 years; or MA + 6		4	0				

Distinguished Architect Data Scientist	BA + 8 years; or MA + 6	Big Data analytics experience	2	0			

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Data Scientist	X	X	X	X	X	X	X	X
Manager, Data Scientist	X	X	X	X	X	X	X	X
Senior Data Scientist	X	X	X	X	X	X	X	X
Staff Data Scientist	X	X	X	X	X	X	X	X
Principal Data Scientist	X	X	X	X	X	X	X	X
Director, Data Scientist	X	X	X	X	X	X	X	X
Distinguished Architect Data Scientist	X	X	X	X	X	X	X	X

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Data Scientist	X	X		X	X	X	X	X
Manager, Data Scientist	X	X	X	X	X	X	X	X
Senior Data Scientist	X	X		X	X	X	X	X
Staff Data Scientist	X	X		X	X	X	X	X
Principal Data Scientist	X	X	X	X	X	X	X	X
Director, Data Scientist	X	X	X	X	X	X	X	X
Distinguished Architect Data Scientist	X	X	X	X	X	X	X	X

5. Would you give hiring preference to applicants with the proposed degree?

- ○ Yes
- ○ **Maybe**
- ○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- ○ Yes
- ○ **Maybe**
- ○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- ○ Yes
- ○ **Maybe**
- ○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- ○ Yes
- ○ **Maybe**
- ○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- ○ Yes
- ○ **Maybe**
- ○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- ○ Yes
- ○ Maybe
- ○ **No**

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

- ○ **Yes**
- ○ Maybe
- ○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? _____

7. Would your organization provide tuition assistance?

- ○ Yes
- ○ Maybe
- ○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			Mediums	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☐	☐	☐	☐
Preference	☐	☐	☐	☐	☐

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

- ☐ Program Start-Up Funds
- ☐ On-site Internships
- ☐ Part-Time Faculty
- ☐ Tuition Reimbursement
- ☐ Employee Release Time
- ☐ Equipment
- ☐ **Real world data and problems for instructional and practicum use**

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

- ○ Yes, I will. Please provide preferred email: _____
- ○ Yes, they would. Please provide preferred email: _____
- ○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

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12. Provide any additional comments about this degree program and concentrations.

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Please return completed surveys by ***Friday, September 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

B.S. Data Science Degree Program

The University of Arkansas Bachelor of Science in Data Science major will prepare students for a successful career in data science with a solid amalgamation of given capabilities:

- an ability to demonstrate use of information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, bioinformatics, and data analysis and visualization,

- an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

- an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

- an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

- an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: _____
- Type of Company: _____
- Contact Person: _____
- Position Title: _____
- Email: _____
- Phone: _____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 __ Associate Data Scientist_____
- Job Title 2 _Data Analyst_____
- Job Title 3 ___Data Entry Engineer_____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Yes		1	0	3	3	$60k	Cost of living + performace
Job Title 2	Yes		2	0	3	3	$50k	Cost of living + performace
Job Title 3	Yes		2	1	2	2	$45k	Cost of living + performace
Job Title 4	Yes							
Job Title 5								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								
Job Title 10								

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	x	x	x	x	☐	x	☐	☐
Job Title 2	☐	x	x	☐	☐	☐	☐	☐
Job Title 3	x	x	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	x	☐	☐	☐	☐	x	☐	x
Job Title 2	☐	x	☐	☐	x	x	☐	☐
Job Title 3	☐	x	☐	x	☐	☐	x	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

○ Yes

X Maybe

○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

○ Yes

X Maybe

○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

X Yes

○ Maybe

○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

○ Yes

○ Maybe

X No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

○ Yes

○ Maybe

X No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

○ Yes

○ Maybe

X No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

X Yes

○ Maybe

○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? _____2_____

7. Would your organization provide tuition assistance?

○ Yes

X Maybe

○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☐	☐	☐	☐
Preference	☐	☐	x	x	☐

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

☐ Program Start-Up Funds

X On-site Internships

X Part-Time Faculty

X Tuition Reimbursement

X Employee Release Time

X Equipment

X Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

X Yes, I will. Please provide preferred email: _____

○ Yes, they would. Please provide preferred email: _____

○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

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12. Provide any additional comments about this degree program and concentrations.

_____

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Please return completed surveys by ***Friday, September 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

B.S. Data Science Degree Program

The University of Arkansas Bachelor of Science in Data Science major will prepare students for a successful career in data science with a solid amalgamation of given capabilities:

1. an ability to demonstrate use of information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, bioinformatics, and data analysis and visualization,

2. an ability to develop descriptive, predictive, and prescriptive mathematical/statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data,

3. an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and societal and ethical impacts,

4. an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers, and

5. an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another, and

6. an ability to communicate in written, verbal, technical, and non-technical forms.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: _Metova, Inc. _____
- Type of Company: _Professional services_____
- Contact Person: __Kent Watson_____
- Position Title: _VP Technology_____
- Email: _kent.watson@metova.com_____
- Phone: _479-200-1379_____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 __Data Engineer_____
- Job Title 2 __Machine Learning Engineer_____
- Job Title 3 __Data Scientist_____
- Job Title 4 __Business Analyst_____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Bachelors	None	0	0	5	20	60,000	5%
Job Title 2	Bachelors	None	0	0	5	20	60,000	5%
Job Title 3	Masters	None	1	0	2	10	70,000	5%
Job Title 4	Bachelors	None	1	0	2	6	50,000	5%
Job Title 5								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								
Job Title 10								

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	X	☐	X	☐	X	☐	☐	X
Job Title 2	X	☐	X	☐	X	☐	X	X
Job Title 3	X	X	X	☐	X	X	X	X
Job Title 4	X	☐	☐	☐	X	☐	☐	X
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	X	X	☐	X	X	X	X	X
Job Title 2	X	X	☐	X	X	X	X	X
Job Title 3	X	X	X	X	X	X	X	X
Job Title 4	X	X	X	☐	☐	☐	☐	X
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

X Yes

○ Maybe

○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

X Yes

○ Maybe

○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

X Yes

○ Maybe

○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

X Yes

○ Maybe

○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

○ Yes

X Maybe

○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

○ Yes

X Maybe

○ No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

○ Yes

X Maybe

○ No

5g. Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?

○ Yes
X Maybe

○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? _10_____

7. Would your organization provide tuition assistance?

○ Yes
X Maybe

○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	X	☐	☐	X
Preference	☐	☐	☐	☐	☐

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

☐ Program Start-Up Funds
X On-site Internships

☐ Part-Time Faculty

☐ Tuition Reimbursement
X Employee Release Time
X Equipment

☐ Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

X Yes, I will. Please provide preferred email: __kent.watson@metova.com_____

○ Yes, they would. Please provide preferred email: _____

○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_The data science field is blowing up in the business world and technology industry. Arkansas, particularly Northwest Arkansas has been playing catchup in many areas around developing technology talent. We have a major talent gap in terms of the number of positions open and the number of graduates to fill those positions. Adding a Data Science program at the U of A would help make Northwest Arkansas known as a regional hub for producing IT talent. Additionally, creating a local talent pool will help fill jobs here in NWA vs. in other states or countries. The large employers who need this skillset will hire it where they can find it. Growing and hiring talent here will help further economic development in NWA.

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12. Provide any additional comments about this degree program and concentrations.

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Please return completed surveys by ***Friday, December 14, 2018*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

U of A B.S. Data Science Degree Program Outcomes

The U of A Bachelor of Science in Data Science major will prepare students for a successful career in data science with an amalgamation of capabilities:

1. an ability to use information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, and data analysis and visualization;

2. an ability to develop descriptive, predictive, and prescriptive mathematical and statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data;

3. an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and an awareness of societal and ethical impacts;

4. an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers;

5. an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another; and,

6. an ability to communicate in written, verbal, technical, and non-technical forms.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: __First Orion_____
- Type of Company: ___For profit_____
- Contact Person: ___Allison Nicholas_____
- Position Title: ___Director of Recruiting_____
- Email: ___anicholas@firstorion.com_____
- Phone: __501.269.4119_____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 __Data Scientist_____
- Job Title 2 __Data Science Apprenticeship_____
- Job Title 3 __Data Analyst Apprenticeship_____

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

3. Please complete the following information, for each job title listed above, on the following pages:	**Degree Required**	**Certification or Licensure Required**	**# of Positions Currently Filled**	**# of Positions Currently Open**	**# of Positions per Year Available in Next 2-5 Years**	**# of Positions per Year Available in Next 6-10 Years**	**Average Starting Annual Salary**	**Average Annual Salary Increase**
Job Title 1 Data Scientist	Yes	No	4	1	1	1	104,000.00	
Job Title 2 Data Science Apprenticeship	Yes	No	4	0	1	1	70,000.00	
Job Title 3 Data Analyst Apprenticeship	Yes	No	1	0	1	1	56,000.00	

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	X	X	X	X	X	X	X	X
Job Title 2	X	X	X	X	X	X	X	X
Job Title 3	X	X	X		X	X	X	X
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	X	X	X	X	X	X	X	X
Job Title 2	X	X	X	X	X	X	X	X
Job Title 3	X	X	X	X	X	X	X	X
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

- ○ Yes
- X Maybe
- ○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- ○ Yes
- X Maybe
- ○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- ○ Yes
- X Maybe
- ○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- ○ Yes
- X Maybe
- ○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- ○ Yes
- X Maybe
- ○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- ○ Yes
- ○ Maybe

X No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

- ○ Yes
- ○ Maybe
- X No

5g. Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?

- ○ Yes
- ○ Maybe
- X No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? _____0_____

7. Would your organization provide tuition assistance?

- ○ Yes
- ○ Maybe
- X No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	X	X	☐	X
Preference	☐	X	X	☐	X

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

- ☐ Program Start-Up Funds
- X On-site Internships
- ☐ Part-Time Faculty
- ☐ Tuition Reimbursement
- X Employee Release Time
- ☐ Equipment
- X Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

- ○ Yes, I will. Please provide preferred email: _____
- ○ Yes, they would. Please provide preferred email: _____
- ○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

_____

_____

_____

_____

12. Provide any additional comments about this degree program and concentrations.

_____

Thank you very much for providing us your valuable feedback – we very much appreciate it!

Please return this completed survey by ***Friday, March 22, 2019*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

U of A B.S. Data Science Degree Program Outcomes

The U of A Bachelor of Science in Data Science major will prepare students for a successful career in data science with an amalgamation of capabilities:

1. an ability to use information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, and data analysis and visualization;

2. an ability to develop descriptive, predictive, and prescriptive mathematical and statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data;

3. an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and an awareness of societal and ethical impacts;

4. an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers;

5. an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another; and,

6. an ability to communicate in written, verbal, technical, and non-technical forms.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: _____Movista Inc._____
- Type of Company: _____Technology - Software as a Service _____
- Contact Person: _____Allyson Malone_____
- Position Title: _____Director of People _____
- Email: _____Allyson@movista.com_____
- Phone: _____479-445-8989_____

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 ___Director of Data Insights_____
- Job Title 2 _____Data Science Engineer_____
- Job Title 3 _____Data Analytics Engineer_____
- Job Title 4 _____ Machine Learning Engineer _____
- Job Title 5 Behavioral Science Analyst (Human Computer Interaction) _
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Yes	No	0	1	0	1	$150,000	5-10%
Job Title 2	Yes	No	0	1-2	1	2	$120,000	5-10%
Job Title 3	Yes	No	0	1-2	1	2	$100,000	5-10%
Job Title 4	Yes	No	0	1-2	1	2	$110,000	5-10%
Job Title 5	Yes	No	0	1-2	1	2	$120,000	5-10%

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	x	☐	x	x	x	☐	x	x
Job Title 2	x	x	x	x	x	☐	x	x
Job Title 3	x	x	x	☐	☐	☐	x	x
Job Title 4	x	x	x	x	☐	☐	☐	x
Job Title 5	☐	x	x	☐	x	☐	x	x
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	x	x	x	☐	☐	x	☐	x
Job Title 2	x	x	☐	x	x	x	x	x
Job Title 3	x	x	☐	x	x	x	x	x
Job Title 4	x	x	☐	x	x	☐	x	x
Job Title 5	x	x	☐	☐	☐	x	☐	x
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

- ◯ Yes
- ◯ Maybe
- ◯ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- ◯ Yes
- ◯ Maybe
- ◯ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- ◯ Yes
- ◯ Maybe
- ◯ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- ◯ Yes
- ◯ Maybe
- ◯ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- ◯ Yes
- ◯ Maybe
- ◯ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- ◯ Yes

○ Maybe

○ No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

○ Yes

○ Maybe

○ No

5g. Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?

○ Yes

○ Maybe

○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? ___10-15_____

7. Would your organization provide tuition assistance?

○ Yes

○ Maybe

○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			**Mediums**	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	x	x	x	x	x
Preference	☐	x	x	x	x

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

X Program Start-Up Funds
X On-site Internships
☐ Part-Time Faculty
X Tuition Reimbursement
X Employee Release Time
☐ Equipment
X Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

○ Yes, I will. Please provide preferred email: ___Joel.Sporleder@movista.com_____

○ Yes, they would. Please provide preferred email: _____

○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____This program would benefit us through creating a currently unavailable workforce, opening the door to a new economic stream, and also position us to become the known experts in a rapidly evolving field. In addition to creating new opportunities for employees and employer, this degree would lessen the need to "look elsewhere" for solutions to field related challenges.

12. Provide any additional comments about this degree program and concentrations.

We are very excited about the potential of this program. Please let us know what we could possibly do to help.

_____

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Thank you very much for providing us your valuable feedback – we very much appreciate it!

Please return this completed survey by ***Sunday, March 31, 2019*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

U of A B.S. Data Science Degree Program Outcomes

The U of A Bachelor of Science in Data Science major will prepare students for a successful career in data science with an amalgamation of capabilities:

1. an ability to use information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, and data analysis and visualization;

2. an ability to develop descriptive, predictive, and prescriptive mathematical and statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data;

3. an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and an awareness of societal and ethical impacts;

4. an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers;

5. an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another; and,

6. an ability to communicate in written, verbal, technical, and non-technical forms.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: Rock Region METRO
- Type of Company: Mixed Mode Transit System
- Contact Person: Greg Williamson
- Position Title: Manager - HR
- Email: gwilliamson@rrmetro.org
- Phone: 501-375-6717 (257)

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 Transit Planner
- Job Title 2 Planning and Safety Officer
- Job Title 3 _____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	Urban or Transportation Planning		one (1)	none (0)			$55K	3%
Job Title 2	Urban or Transportation Planning		Budgeted for Future	none (0)			$90K	3%
Job Title 3								
Job Title 4								
Job Title 5								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								
Job Title 10								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	☑	☑	☑	☑	☑	☑	☑	☑
Job Title 2	☑	☑	☑	☑	☑	☑	☑	☑
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	☑	☑	☑	☑	☑	☑	☑	☑
Job Title 2	☑	☑	☑	☑	☑	☑	☑	☑
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

- ○ Yes
- ✓ Maybe
- ○ No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- ○ Yes
- ✓ Maybe
- ○ No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- ○ Yes
- ✓ Maybe
- ○ No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- ○ Yes
- ✓ Maybe
- ○ No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- ○ Yes
- ✓ Maybe
- ○ No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- ○ Yes
- ○ Maybe
- ✓ No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

- [x] Yes
- [ ] Maybe
- [ ] No

5g. Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?

- [ ] Yes
- [ ] Maybe
- [x] No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? 2-5

7. Would your organization provide tuition assistance?

- [ ] Yes
- [x] Maybe
- [ ] No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			Mediums	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☐	☐	☐	☑
Preference	☐	☑	☑	☐	☑

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

- [ ] Program Start-Up Funds
- [ ] On-site Internships
- [ ] Part-Time Faculty
- [ ] Tuition Reimbursement
- [ ] Employee Release Time
- [ ] Equipment
- [x] Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

- ○ Yes, I will. Please provide preferred email: _____
- ✓ Yes, they would. Please provide preferred email: gwilliamson@rrmetro.org
- ○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

_____

_____

_____

_____

_____

_____

12. Provide any additional comments about this degree program and concentrations.

_____

This degree program could supplement preferred degrees in Urban and Transportation Planning.

Thank you very much for providing us your valuable feedback – we very much appreciate it!

Please return this completed survey by ***Friday, March 22, 2019*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

U of A B.S. Data Science Degree Program Outcomes

The U of A Bachelor of Science in Data Science major will prepare students for a successful career in data science with an amalgamation of capabilities:

1. an ability to use information systems, statistics, and computer science principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, data storage, data governance, data security, machine learning, computational analytics, and data analysis and visualization;

2. an ability to develop descriptive, predictive, and prescriptive mathematical and statistical models to provide abstractions of complex systems and organizational problems and to apply computational methods to draw conclusions supported by data;

3. an ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, decision making, visualization, and an awareness of societal and ethical impacts;

4. an ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers;

5. an ability to work effectively in multidisciplinary teams and transfer findings from one knowledge domain to another; and,

6. an ability to communicate in written, verbal, technical, and non-technical forms.

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

1. Please complete this information about your organization, as a potential employer:

- Company Name: DXC TECHNOLOGY
- Type of Company: _____
- Contact Person: ALAN ALLGAIER
- Position Title: I OWN HEALTHCARE ANALYTICS DELIVERY
- Email: AALLGAIER@DXC.COM
- Phone: 248 495 8107

2. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed concentration program:

- Job Title 1 DATA SCIENTIST
- Job Title 2 _____
- Job Title 3 _____
- Job Title 4 _____
- Job Title 5 _____
- Job Title 6 _____
- Job Title 7 _____
- Job Title 8 _____
- Job Title 9 _____
- Job Title 10 _____

3. Please complete the following information, for each job title listed above, on the following pages:

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 1	MASTERS +	NONE	CONFIDENTIAL					
Job Title 2								
Job Title 3								
Job Title 4								
Job Title 5								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Degree Required	Certification or Licensure Required	# of Positions Currently Filled	# of Positions Currently Open	# of Positions per Year Available in Next 2-5 Years	# of Positions per Year Available in Next 6-10 Years	Average Starting Annual Salary	Average Annual Salary Increase
Job Title 6								
Job Title 7								
Job Title 8								
Job Title 9								
Job Title 10								

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

4. Please select all the skills that individuals would need for employment in the positions listed:

	Evaluating the quality of data	Collecting data via research techniques	Understanding and rigorously analyzing data using relevant software packages	Applying data science theories to understand the data and make predictions	Communicating findings in writing	Communicate findings via public speaking	Communicating findings via graphical and visualization techniques	Applying critical thinking skills to solve novel challenges
Job Title 1	☑	☑	☑	☑	☑	☑	☑	☑
Job Title 2	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

University of Arkansas B.S. Data Science Degree Program
Employer Needs Survey

	Generalizing knowledge from one subject area to another using data science	Working in a team-based environment	Project management skills and leading teams	Management of databases	Data cleansing, processing, and wrangling	Relevant work or internship experience	Data privacy, security, and ethics	Data science applied to business and economics in an organizational setting
Job Title 1	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 2	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 3	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 4	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 5	☐	☐	☐	☐	☐	☐	☐	☐
Job Title 6	☐	☐	☐	☐	☐	☐	☐	☐
...	☐	☐	☐	☐	☐	☐	☐	☐

5. Would you give hiring preference to applicants with the proposed degree?

- [x] Yes
- [ ] Maybe
- [ ] No

5a. Would you give hiring preference to applicants with a concentration in Business Data Analytics?

- [x] Yes
- [ ] Maybe
- [ ] No

5b. Would you give hiring preference to applicants with a concentration in Data Science Statistics?

- [ ] Yes
- [x] Maybe
- [ ] No

5c. Would you give hiring preference to applicants with a concentration in social data science, emphasizing social impacts of data analytics?

- [ ] Yes
- [ ] Maybe
- [x] No

5d. Would you give hiring preference to applicants with a concentration in Computational Analytics?

- [ ] Yes
- [x] Maybe
- [ ] No

5e. Would you give hiring preference to applicants with a concentration in Bioinformatics?

- [x] Yes
- [ ] Maybe
- [ ] No

5f. Would you give hiring preference to applicants with a concentration in Supply Chain Analytics?

- ○ Yes
- ○ Maybe
- ○ No

5g. Would you give hiring preference to applicants with a concentration in Biomedical & Healthcare Informatics?

- ○ Yes
- ○ Maybe
- ○ No

6. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? _____

7. Would your organization provide tuition assistance?

- ○ Yes
- ○ Maybe
- ○ No

8. Please select any of the days and times (days/evening/weekend classes) and mediums (in-person or online classes) that would be helpful for your employees:

	Days/Times			Mediums	
	Days	**Evenings**	**Weekends**	**In-Person**	**Online**
Helpful at all	☐	☑	☑	☑	☑
Preference	☐	☑	☑	☐	☑

9. Please select any of the types of support your company are willing to provide for the B.S. Data Science Degree Program:

- ☐ Program Start-Up Funds
- ☐ On-site Internships
- ☐ Part-Time Faculty
- ☐ Tuition Reimbursement
- ☐ Employee Release Time
- ☐ Equipment
- ☐ Real world data and problems for instructional and practicum use

10. Would a senior-level representative of your company be willing to be a member of our advisory committee?

- ○ Yes, I will. Please provide preferred email: _____
- ○ Yes, they would. Please provide preferred email: _____
- ○ No

11. How will this degree program benefit your local community, the state, region, or nation? Please also explain why it will.

WE HAVE A DELIVERY CENTER IN CONWAY. I COULD MOVE DATA SCIENTIST WORK THERE IF THERE WERE A CONCENTRATION OF PEOPLE THERE WHO ARE QUALIFIED.

12. Provide any additional comments about this degree program and concentrations.

THERE IS NO SUCH THING AS A DATA SCIENTIST "IN THE ABSTRACT". ONE NEEDS TO BE KNOWLEGABLE ABOUT THE BUSINESS OF SOMETHING. YOUR 6-POINT "OUTCOMES" INTRODUCTORY PAGE WAS SILENT ON THAT.

THE BEST BET FOR STUDENTS IS TO TAKE A MINOR IN A FIELD OF INTEREST THAT THEY WANT TO PERFORM THEIR CRAFT IN, SUCH AS BUSINESS, OR HEALTHCARE, OR ENGINEERING, ETC.... AND NOT JUST BE A PURE TECHNICIAN.

Thank you very much for providing us your valuable feedback – we very much appreciate it!

Please return this completed survey by ***Friday, March 22, 2019*** to:

karl.schubert@uark.edu

Karl D. Schubert, Ph.D., FIET
Research Professor and Director of Research
for Innovation and Data Science Initiatives
University of Arkansas

Appendix B
DASCBS Curriculum
and 8-Semester Suggested Plan of Study

Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the University Core (http://catalog.uark.edu/undergraduatecatalog/academicregulations/universitycore). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DASC) Core classes at the University of Arkansas, Fayetteville that are required for the degree. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen Concentration) of required and elective Concentration courses to meet the requirements for a Concentration to better prepare them for employment or further study in areas such as:

Accounting Analytics
Bioinformatics
Biomedical and Healthcare Informatics
Business Data Analytics
Computational Analytics
Data Science Statistics
Geospatial Data Analytics
Operations Analytics
Social Data Analytics
Supply Chain Analytics

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic advisor for recommendations.

University Core and General Education **36 credit hours**
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)

Choose one of the following:
ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023)
or ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)

MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)

University Core Science Electives - (two courses with labs)
University Core Fine Arts - 3 credit hours
University Core Humanities - (Students are required to complete PHIL 3103)
PHIL 3103 Ethics and the Professions

Choose one of the following:
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)

University Core Social Science Elective - 6 credit hours
ECON 2143 Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective)

Data Science Required Core **47 credit hours**
DASC 1001 Introduction to Data Science
DASC 1104 Programming Languages for Data Science (R, Python)
DASC 1204 Introduction to Object Oriented Programming for Data Science (JAVA)
DASC 2594 Multivariable Math for Data Scientists
DASC 1222 Role of Data Science in Today's World
DASC 2103 Data Structures & Algorithms
DASC 2113 Principles & Techniques of Data Science
DASC 2203 Data Management & Data Base
DASC 2213 Data Visualization & Communication (Tableau)
DASC 3103 Computing & Big Data
DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
DASC 4892 Data Science Practicum I
DASC 4113 Machine Learning
DASC 4123 Social Problems (Issues) in DASC & Analytics
DASC 4993 Data Science Practicum II

Data Science Required Additional Courses
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) **4 credit hours**
MGMT 2053 Business Foundations **3 credit hours**

Choose from one of these two-course sequences **6 credit hours**
INEG 2313 & INEG 2333 Applied Probability and Statistics for Engineers I and Applied Probability and Statistics for Engineers II (Applied Probability and Statistics for Engineers II)
-- or --
STAT 3013& STAT 3003 Introduction to Probability and Course STAT 3003 Statistical Methods

Data Science Concentration Courses **20-21 credit hours**
General Electives **3-4 credit hours**
Total Hours **120 credit hours**

Data Science - Accounting Analytics (ACCA) Concentration **21 credit hours**
Required Accounting Analytics Concentration Courses (18 credit hours)
ACCT 2013 Accounting Principles
ACCT 2023 Accounting Principles II
ACCT 3533 Accounting Technology
ACCT 3543 Accounting Analytics
ACCT 3543 Accounting Analytics
ISYS 4193 Business Analytics and Visualization

ISYS 4293 Business Intelligence

Elective Accounting Analytics Concentration Courses (Select 3 credit hours)
- FINN 3013 Financial Analysis
- ECON 3033 Microeconomic Theory
- ECON 4743 Introduction to Econometrics
- ECON 4753 Forecasting
- MKTG 3433 Introduction to Marketing
- MKTG 3633 Marketing Research

Data Science - Bioinformatics (BIOF) Concentration **21 credit hours**

Required Bioinformatics Concentration Courses (9 credit hours)
BIOL 2533 Cell Biology
BIOL 2323 General Genetics

Choose one of the following courses:
BIOL 3863 General Ecology
or BIOL 3023 Evolutionary Biology

Elective Bioinformatics Concentration Courses (Select 12 credit hours)
- Note: May not fulfill Concentration electives with all GIS courses
- BIOL 4174 Conservation Genetics
- BIOL 4233 Genomics and Bioinformatics
- BIOL 480V Special Topics in Biological Sciences (Molecular Phylogenetics)
- BIOL 5153 Practical Programming for Biologists
- BIOL 580V Special Topics in Biological Sciences (Meta-Analysis)
- GEOS 3543 Geospatial Applications and Information Science
- GEOS 3553 Spatial Analysis Using ArcGIS
- GEOS 3563 Geospatial Data Mining
- GEOS/ANTH 4553 Introduction to Raster GIS

Data Science - Biomedical and Healthcare Informatics (BMHI) Concentration
21 credit hours

Required Biomedical and Healthcare Informatics Concentration Courses (11 credit hours)
BMEG 2614 Introduction to Biomedical Engineering
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)
BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture)
BMEG 3801 Clinical Observations and Needs Finding

Elective Biomedical and Healthcare Informatics Concentration (Select 10 credit hours)
- BMEG 4713 Cardiovascular Physiology and Devices
- BMEG 4973 Regenerative Medicine
- BMEG 4413 Tissue Engineering
- BMEG 4403 Biomedical Microscopy

BMEG 4513 Biomedical Optics and Imaging
BMEG 4523 Biomedical Data and Image Analysis
BMEG 4983 Genome Engineering and Synthetic Biology
Note: Students completing the Biomedical and Healthcare Informatics Concentration must select CHEM 1103 and PHYS 2054for the University Core Science Electives.

Data Science - Business Data Analytics (BUDA) Concentration 21 credit hours

Required Business Data Concentration Courses (15 credit hours)
ACCT 2013 Accounting Principles
ACCT 2023 Accounting Principles II
WCOB 1033 Data Analysis and Interpretation
ISYS 4193 Business Analytics and Visualization
ISYS 4293 Business Intelligence

Elective Business Data Analytics Concentration Courses (Select 6 credit hours)
FINN 3043 Principles of Finance
FINN 3013 Financial Analysis
ECON 4743 Introduction to Econometrics
ECON 4753 Forecasting
MKTG 3433 Introduction to Marketing
MKTG 3633 Marketing Research

Data Science - Computational Analytics (CMPA) Concentration 21 credit hours

Required Computational Analytics Concentration Courses (9 credit hours)
CSCE 3513 Software Engineering
CSCE 4143 Data Mining
CSCE 4613 Artificial Intelligence

Elective Computational Analytics Concentration Courses (Select 12 credit hours)
Note: Other courses from CSCE and/or other concentrations of DASC can also be added to the concentration electives.
CSCE 3213 Cluster Computing
CSCE 4013 Special Topics
CSCE 4133 Algorithms
CSCE 4253 Concurrent Computing
CSCE 4523 Database Management Systems
DASC 4533 Information Retrieval (IR)
CSCE 4853 Information Security

Data Science - Data Science Statistics (DSST) Concentration 21 credit hours

Required Data Science Statistics Concentration Courses (12 credit hours)
STAT 3113 Introduction to Mathematical Statistics
STAT 4373Experimental Design

STAT 4013 Statistical Forecasting and Prediction
STAT 4333 Analysis of Categorical Responses

Elective Data Science Statistics Concentration Courses (Select 9 credit hours)
- STAT 4023 Bayesian Methods
- STAT 4033 Nonparametric Statistical Methods
- STAT 4043 Sampling Techniques
- CSCE 4613 Artificial Intelligence
- GEOS 3013 Foundations of Geospatial Data Analysis
- GEOS 3543 Geospatial Applications and Information Science
- GEOS 3563 Geospatial Data Mining

Data Science - Geospatial Data Analytics (GSDA) Concentration 21 credit hours

Required Geospatial Data Analytics Concentration Courses (18 credit hours)
GEOS 3543 Geospatial Applications and Information Science
GEOS 3553 Spatial Analysis Using ArcGIS
GEOS 3593 Introduction to Geodatabases
GEOS 3563 Geospatial Data Mining
GEOS 4653 GIS Analysis and Modeling
GEOS 4263 Geospatial Data Science - Sources and Characteristics

Elective Geospatial Data Analytics Concentration Courses (Select 3 credit hours)
- GEOS 3023 Introduction to Cartography
- GEOS 4133 Radar Remote Sensing
- GEOS 3213 Principles of Remote Sensing
- GEOS 4503 Advanced Cartographic Techniques & Production
- GEOS 4593 Introduction to Global Positioning Systems and Global Navigation Satellite Systems
- GEOS/ANTH 4553 Introduction to Raster GIS

Data Science - Operations Analytics (OPNA) Concentration 21 credit hours

Required Operations Analytics Concentration Courses (12 credit hours)
INEG 2413 Engineering Economic Analysis
INEG 3613 Introduction to Operations Research
INEG 3623 Simulation
INEG 4553 Production Planning and Control

Elective Operations Analytics Concentration Courses (9 credit hours)
Select 6 credit hours from:
- INEG 4453 Productivity Improvement
- INEG 4543 Facility Logistics
- INEG 4633 Transportation Logistics
- INEG 4683 Decision Support in Industrial Engineering
- INEG 4383 Risk Analysis for Transportation and Logistics Systems

Any SCMT course at the 2000 level or higher from the Supply Chain Analytics Concentration
Select 3 credit hours from:
INEG 4123 Global Engineering and Innovation
INEG 4433 Systems Engineering and Management
INEG 4443 Project Management

Data Science - Social Data Analytics (SODA) Concentration 20 credit hours

Required Social Data Analytics Concentration Courses (14 credit hours)
SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013)
SOCI 3303 Social Data and Analysis
SOCI 3301L Social Data and Analysis Laboratory
SOCI 3313 Social Research
SOCI 4253 Social Impact of Data Analytics
SOCI 3001L Social Science Data Analytics Lab

Elective Social Data Analytics Concentration Courses (6 credit hours)
GEOS 3013 Foundations of Geospatial Data Analysis
GEOS 3543 Geospatial Applications and Information Science
GEOS 3563 Geospatial Data Mining
GEOS 4513 Introduction to GIS Programming
GEOS 4553 Introduction to Raster GIS
PLSC 3603 Scope and Methods of Political Science
PLSC 4213 Campaigns and Elections
SCWK 4073 Social Work Research and Technology I
SOCI 4183 Social Network Analysis
SOCI 4013 Special Topics in Sociology

Data Science - Supply Chain Analytics (SYCA) Concentration 21 credit hours

Required Supply Chain Analytics Concentration Courses (18 credit hours)
SCMT 2103 Introduction to Supply Chain Management
SCMT 3613 Supply Management
SCMT 3623 Inventory and Forecasting Analytics
SCMT 3643 International Logistics
SCMT 3443 Transportation and Distribution Management
SCMT 4653 Supply Chain Strategy

Elective Supply Chain Analytics Concentration Courses (Select 3 credit hours)
SCMT 3653 Retail Supply Chain Analysis
SCMT 3633 Behavioral Supply Chain Management
SCMT 4123 Sustainable Logistics and Supply Chain Management
SCMT 4103 Special Topics in Supply Chain Management
SCMT 4633 Transportation Analytics
Any INEG course at the 3000 level or higher from the Operations Analytics Concentration

B.S. Data Science (Core)

8-Semester *Suggested* Plan of Study
120 Total Credit Hours of which 21 Credit Hours are Concentration-specific Hours
Concentration-specific hours are notational for hours and when in this *suggested* Plan of Study
New courses are marked in italics

Year 1 – Fall			Year 1 -- Spring	
MATH 2554	Calculus I		MATH 2564	Calculus II
GNED NNN4	Gen Ed, Science Elective		GNED NNN3	Gen Ed, History or Government
ENGL 1013	Composition I		GNED NNN3	Gen Ed, Composition II / Technical Comp.
DASC 1001	*Intro to Data Science (incl. CoE, WCOB, FCoAS Persp.)*		*DASC 1204*	*Intro to Object Oriented Programming (JAVA)*
DASC 1104	*Programming Languages for Data Science (R, Python)*		*DASC 1222*	*Role of Data Science in Today's World*
16 hours	**Total**		**16 hours**	**Total**
5 hours	Data Science Core - Required (New + Existing Courses)		10 hours	Data Science Core - Required (N + E Courses)
0 hours	Data Science – Concentration Required + Elective		0 hours	Data Science – Concentration Required + Elective
11 hours	Gen Ed		6 hours	Gen Ed
0 hours	General Elective		0 hours	General Elective

Year 2 – Fall			Year 2 -- Spring	
DASC 2594	*Multivariable Math for Data Scientists*		MGMT 2053	Business Foundations
INEG 2313	Applied Probability and Statistics for Engineers I		INEG 2333	Applied Probability and Statistics for Engineers II
DASC 2103	*Data Structures & Algorithms*		*DASC 2203*	*Data Management & Data Base*
DASC 2113	*Principles & Techniques of Data Science*		*DASC 2213*	*Data Visualization & Communication*
GNED NNN3	Gen Ed, Fine Arts Elective		RRRR NNN3	[Required Concentration Course]
16 hours	**Total**		**15 hours**	**Total**
13 hours	Data Science Core – Required (New + Existing Courses)		12 hours	Data Science Core – Required (N + E Courses)
0 hours	Data Science – Concentration Required + Elective		3 hours	Data Science – Concentration Required + Elective
3 hours	Gen Ed		0 hours	Gen Ed
0 hours	General Elective		0 hours	General Elective

Note 1: (STAT 3013 Intro. to Probability & Statistics + STAT 3003 Statistical Methods (DASC section)) can be substituted for (INEG 2313 + INEG 2333).

Year 3 – Fall			Year 3 -- Spring	
PHIL 3103	Gen Ed, Ethics and the Professions		*DASC 3203*	*Optimization Methods in Data Science*
DASC 3103	*Cloud Computing & Big Data*		*DASC 3213*	*Statistical Learning*
RRRR NNN3	[Required Concentration Course]		RRRR NNN3	[Required Concentration Course]
GNED NNN4	Gen Ed, Science Elective		ECON 2143	Gen Ed, Basic Economics: Theory and Practice
GNED NNN3	Gen Ed, Social Science Elective		GNED NNN3	Gen Ed, Social Science Elective
16 hours	**Total**		**15 hours**	**Total**
3 hours	Data Science Core - Required (New + Existing Courses)		6 hours	Data Science Core - Required (N + E Courses)
3 hours	Data Science – Concentration Required + Elective		3 hours	Data Science – Concentration Required + Elective
10 hours	Gen Ed		6 hours	Gen Ed
0 hours	General Elective		0 hours	General Elective

Year 4 – Fall			Year 4 -- Spring	
DASC 4892	*Data Science Practicum I*		*DASC 4993*	*Data Science Practicum II*
DASC 4113	*Machine Learning*		CCCC NNN3	Concentration Elective
DASC 4123	*Social Problems (Issues) in DASC & Analytics*		CCCC NNN3	Concentration Elective
CCCC NNN3	[Concentration Elective]		GNEL NNN3	General Elective (possible catch-up credit)
CCCC NNN3	[Concentration Elective]			
14 hours	**Total**		**12 hours**	**Total**
8 hours	Data Science Core - Required (New + Existing Courses)		3 hours	Data Science Core - Required (N + E Courses)
6 hours	Data Science – Concentration Required + Elective		6 hours	Data Science – Concentration Required + Elective
0 hours	Gen Ed		0 hours	Gen Ed
0 hours	General Elective		3 hours	General Elective

Total Hours by Course Category				
120 hours	Total			
60 hours	Data Science Core - Required (New + Existing Courses)			
21 hours	Data Science – Concentration Required + Elective			
36 hours	Gen Ed			
3 hours	General Elective			

Appendix C
DASCBS Standard Course Evaluation

DASC – [Course Information]

Course:	DASC NNNN – [Course Title]
Department:	Data Science
Faculty:	

The University of Arkansas provides online instructor/course evaluations for all end of course evaluations. Please note the following as you complete this online course evaluation:

1. Evaluations are located on a confidential evaluation site.
2. Your instructor will not see the evaluations until after final grades have been submitted. Your instructor's department chair and college dean will receive the composite results.
3. There is one open-ended question. If you provide a response, only the instructor will see it unless he/she decides to share responses with his/her department chair and/or college dean.
4. Your evaluations will be confidential. Your responses to scaled questions will be simply part of the composite data reported to your Instructor. Also the instructor will not be able to attribute any comments you make in the open-ended questions to you unless you write something that identifies you either directly or indirectly.

Demographics

UofA Student Demographics

Your class

Freshman Sophomore Junior Senior Graduate Other

Expected grade

A/PASS B C D F/FAIL

Your College:

Data Science (DASC) Program
College of Education and Health Professions
College of Engineering
Dale Bumpers College of Agricultural, Food and Life Sciences
Fay Jones School of Architecture and Design
J. William Fulbright College of Arts and Sciences
Sam M. Walton College of Business
School of Law
Graduate School
UNDECLARED

Course required

Yes No

DASC Core: Instructor Questions

Instructor Based Questions

My instructor gives appropriate/timely feedback on each student's performance.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor is readily available for consultation.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor is fair and impartial when dealing with students.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor seems well-prepared for class.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor is effective in teaching the subject matter of this course.

Strongly Agree Agree Undecided Disagree Strongly Disagree

The teaching methods used in this course enable me to learn.

Strongly Agree Agree Undecided Disagree Strongly Disagree

DASC: Course Based Questions

Course Based Questions

The content of this course is consistent with the objectives of the course.

Strongly Agree Agree Undecided Disagree Strongly Disagree

Course activities/assignments help me learn the material.

Strongly Agree Agree Undecided Disagree Strongly Disagree

Successful performance in this course requires that I understand the material.

Strongly Agree Agree Undecided Disagree Strongly Disagree

I developed a greater appreciation for this subject.

Strongly Agree Agree Undecided Disagree Strongly Disagree

This course improves my understanding of concepts and principles in this field.

Strongly Agree Agree Undecided Disagree Strongly Disagree

When I have a question or comment I know it will be respected.

Strongly Agree Agree Undecided Disagree Strongly Disagree

I understand the course requirements and grading scale.

Strongly Agree Agree Undecided Disagree Strongly Disagree

University Core Course

Course Based Questions

Overall, I would rate this course as:

Excellent Good Fair Poor Very Poor

University Core Instructor

Instructor Based Questions

Overall, I would rate this instructor as:

Excellent Good Fair Poor Very Poor

My Instructor is fluent in English

Strongly Agree Agree Undecided Disagree Strongly Disagree

Faculty Comment Questions

Please use the box below to provide additional comments regarding your instructor or this course. All comments are seen only by the instructor and are not viewed by department heads, chairs or deans.

Comments:

Comments:

Appendix D
DASCBS Faculty

Data Science Faculty in the 2020-2021 Catalog of Studies

(The year listed at the end of each name is the year that a faculty member was started at the university.)

A

Alverson, Andrew James, Ph.D. (University of Texas at Austin), M.S. (Iowa State University), B.S. (Grand Valley State University), Assistant Professor, Department of Biological Sciences, 2012.

Aly, Mohamed H., Ph.D. (Texas A&M), M.S., B.S. (Zagazig University), Assistant Professor, Department of Geosciences, 2013.

Arnold, Mark E., Ph.D., B.S. (Northern Illinois University), A.S. (Rock Valley College), Associate Professor, Department of Mathematical Sciences, 1993.

B

Beaulieu, Jeremy M., Ph.D. (Yale University), M.S., B.S. (California Polytechnic State University), Assistant Professor, Department of Biological Sciences, 2016.

Bradley, Mindi, Ph.D., M.A. (Pennsylvania State University), B.S. (Georgia State University), Professor, Department of Sociology and Criminology, 2005.

C

Cassady, Richard, Ph.D., M.S.I.S.E., B.S.I.S.E. (Virginia Polytechnic Institute and State University), Professor, Department of Industrial Engineering, 2000.

Chakraborty, Avishek, Ph.D. (Duke University), M. STAT (Indian Statistical Institute), B. STAT (Indian Statistical Institute), Assistant Professor, Department of Mathematical Sciences, 2014.

Chaovalitwongse, Wanpracha Art, Ph.D., M.S. (University of Florida), B.Eng. (King Mongkut Institute of Technology, Ladkrabang, Thailand), Professor, Department of Industrial Engineering, 2016.

Chimka, Justin Robert, Ph.D., M.S.I.E., B.S.I.E. (University of Pittsburgh), Associate Professor, Department of Industrial Engineering, 2002.

Cothren, Jackson David, Ph.D., M.S. (The Ohio State University), B.S. (United States Air Force Academy), Professor, Department of Geosciences, 2004.

Cronan, Timothy P., Ph.D. (Louisiana Tech University), M.S. (South Dakota State University), B.S. (University of Southwestern Louisiana), Professor, Department of Information Systems, 1979.

D

Datta, Jyotishka, Ph.D. (Purdue University), M.Stat., B.Stat. (Indian Statistical Institute, Kolkata, India), Assistant Professor, Department of Mathematical Sciences, 2016.

Dennis, Norman D., Ph.D. (University of Texas at Austin), M.B.A. (Boston University), M.S.C.E., B.S.C.E. (Missouri University of Science and Technology), University Professor, Department of Civil Engineering, 1996.

Douglas, Marlis R., Ph.D., M.S., B.S. (University of Zurich), Professor, Department of Biological Sciences, 2012.

Drawve, Grant R., Ph.D. (University of Arkansas at Little Rock), M.A., B.A. (Southern Illinois University), Assistant Professor, Department of Sociology and Criminology, 2016.

Du, Yuchun, Ph.D. (Kagoshima University, Japan), B.S. (Shaanxi University of Technology, China), Associate Professor, Department of Biological Sciences, 2007.

E

Evans, Timothy A., Ph.D. (Indiana University), B.S. (Slippery Rock University), Assistant Professor, Department of Biological Sciences, 2013.

F

Forbes, Kristian M., Ph.D. (University of Jyvaskyla, Finland), Assistant Professor, Department of Biological Sciences

Freeze, Ron, Ph.D. (Arizona State University), M.B.A. (University of Missouri–Kansas City), B.S. (General Motors Institute), Clinical Associate Professor, Department of Information Systems, 2015.

Fugate, Brian, Ph.D., M.B.A., B.S. (University of Tennessee), Professor, Department of Supply Chain Management, 2015.

G

Gauch, Susan E., Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, Department of Computer Science and Computer Engineering, 2007.

H

Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A&M University), Associate Professor, Department of Sociology and Criminology, 2011.

Hearne, Brittany N., Ph.D. (Vanderbilt University), Assistant Professor, Department of Sociology and Criminology, 2018

Hofer, Christian, Ph.D. (University of Maryland University College), B.A. (European School of Business), Associate Professor, Department of Supply Chain Management, 2007.

I

Iyer, Shilpa, Ph.D. (University of Georgia), M.Sc., B.Sc. (University of Pune, India), Assistant Professor, Department of Biological Sciences, 2016.

J

Jensen, Hanna Katariina, Ph.D. (University of Oulu, Finland), Research Assistant Professor, Department of Biomedical Engineering, 2015.

K

Kaman, Tulin, Ph.D. (Stony Brook University), M.S. (Istanbul Technical University), B.S. (Yildiz Technical University), Assistant Professor, Department of Mathematical Sciences, 2017.

Keiffer, Elizabeth, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Instructor, Department of Information Systems, 2016.

Kent, John, Ph.D. (University of Tennessee), M.B.A (University of Dallas), B.S. (Henderson State University), Department of Supply Chain Management, 2014.

Kim, Myunghee Michelle, Ph.D., B.S. (University of Texas at Austin), Clinical Assistant Professor, Department of Biomedical Engineering, 2013.

L

Lewis, Jeffrey A., Ph.D. (University of Wisconsin-Madison), B.S. (University of California-Santa Barbara), Assistant Professor, Department of Biological Sciences, 2013.

Liao, Haitao, Ph.D., M.S., M.S.I.S.E. (Rutgers University), B.S.E.E. (Beijing Institute of Technology), Professor, Department of Industrial Engineering, 2015.

Limp, Fred, Ph.D., M.A., B.A. (Indiana University at Bloomington), University Professor, Department of Geosciences, 1979.

Liu, Xiao, Ph.D. (National University of Singapore), B.S.M.E. (Harbin Institute of Technology, China), Assistant Professor, Department of Industrial Engineering, 2017.

Liu, Xiaoqing Frank, Ph.D. (Texas A&M University), M.S. (Southeast University, China), B.S. (National University of Defense Technology, China), Professor, Department of Computer Science and Computer Engineering, 2015.

M

Milburn, Ashlea R., Ph.D. (Georgia Institute of Technology), M.S.I.E. (Virginia Polytechnic Institute and State University), B.S.I.E. (University of Arkansas), Associate Professor, Department of Industrial Engineering, 2010.

Muldoon, Timothy J., M.D. (Baylor College of Medicine), Ph.D. (Rice University), B.S. (Johns Hopkins University), Assistant Professor, Department of Biomedical Engineering, 2012.

Mullins, Jeff, M.A., B.S. (University of Arkansas), Executive in Residence, Department of Information Systems, 2006.

N

Nelson, Christopher, Ph.D. (Vanderbilt University), B.S. (University of Arkansas, Fayetteville); Assistant Professor, Department of Biomedical Engineering, 2019.

Nolan, Steven, [MA or MS?] (University of Arkansas), B.S. (Colorado Mesa University), 2017.

Nurre, Sarah, Ph.D., M.Eng., B.S. (Rensselaer Polytechnic Institute), Assistant Professor, Department of Industrial Engineering, 2015.

P

Park, Kiwoong, Ph.D. M.A. (Seoul National University), B.S. (Seoul National University), Assistant Professor, Department of Sociology and Criminology, 2019.

Parnell, Gregory S., Ph.D. (Stanford University), M.S. (University of Southern California), M.E.I.S.E. (University of Florida), B.S. (University of New York at Buffalo), Research Professor, Department of Industrial Engineering, 2013.

Petris, Giovanni, Ph.D., M.S. (Duke University), B.S. (Universita degli Studi di Milano, Italy), Professor, Department of Mathematical Sciences, 1999.

Pierson, Harry A., Ph.D. (The Ohio State University), M.S.E.M., B.S.M.E. (University of Missouri, Rolla), Assistant Professor, Department of Industrial Engineering, 2014.

Pohl, Edward A., Ph.D., M.S.R.E. (University of Arizona), M.S.S.E. (Air Force Institute of Technology), M.S.E.M. (University of Dayton), B.S.E.E. (Boston University), Professor, Department of Industrial Engineering, 2004.

Pohl, Letitia, Ph.D. (University of Arkansas), M.S.S.E. (Air Force Institute of Technology), B.S.M.E. (Tulane University), Clinical Assistant Professor, Department of Industrial Engineering, 2013.

Q

Quinn, Kyle P., Ph.D. (University of Pennsylvania), B.S. (University of Wisconsin), Assistant Professor, Department of Biomedical Engineering, 2014.

R

Rainwater, Chase E., Ph.D. (University of Florida), B.S.I.E. (University of Arkansas), Associate Professor, Department of Industrial Engineering, 2009.

Rao, Raj R., Ph.D. (University of Georgia), M.S. (University of Texas), M.Sc., B.E. (Birla Institute of Technology and Sciences, India), Professor, Department of Biomedical Engineering, 2016.

Robinson, Samantha
Rhoads, Douglas Duane, Ph.D. (Kansas State University), M.A., B.A. (Wichita State University), University Professor, Department of Biological Sciences, 1990.

Rossetti, Manuel D., Ph.D., P.E., M.S.I.S. (The Ohio State University), B.S.I.E. (University of Cincinnati), Professor, Department of Industrial Engineering, 1999.

Rossiter-Hofer, Adriana, Ph.D. (University of Maryland-College Park), M.S. (Federal University of Rio de Janeiro, Brazil), B.S. (Federal University of Pernambuco, Brazil), Associate Professor, Department of Supply Chain Management, 2008.

S

Schubert, Karl D., Ph.D. (University of Arkansas), M.S. (University of Kentucky), B.S. (University of Arkansas), Professor, Office of the Dean College of Engineering, 2018.

Shook, Carole, M.S.B.A., B.S.B.A. (University of Arkansas), Instructor, Department of Supply Chain Management, 1999.

Siepielski, Adam M., Ph.D. (University of Wyoming-Laramie), M.S. (New Mexico State University), B.S. (Pennsylvania State University-University Park), Assistant Professor, Department of Biological Sciences, 2015.

Song, Young Hye, Ph.D. (Cornell University), M.S. (Cornell University), B.S. (Carnegie Mellon University), Assistant Professor, Department of Biomedical Engineering, 2019.

Sullivan, Kelly M., Ph.D. (University of Florida), M.S.I.E., B.S.I.E. (University of Arkansas), Assistant Professor, Department of Industrial Engineering, 2012.

Syler, Rhonda A., Ph.D. (Auburn University), M.B.A. (Columbus State University), M.S. (Kansas State University), B.S. (Middle Tennessee State University), Clinical Assistant Professor, Department of Information Systems, 2016.

T

Thomas, Rodney W., Ph.D., M.B.A. (University of Tennessee), B.S.B.A. (Greensboro College), Associate Professor, Department of Supply Chain Management, 2017.

Thomas, Stephanie, Ph.D. (Georgia Southern University), M.B.A (University of Tennessee), B.A. (University of Tennessee), Clinical Assistant Professor, Department of Supply Chain Management, 2017.

Tipton, John Robert, Ph.D. (Colorado State University), M.S. (Colorado State University), B.S. (Colorado State University), Assistant Professor, Department of Mathematical Sciences, 2017.

Tullis, Jason A., Ph.D., M.S. (University of South Carolina at Columbia), B.S. (Brigham Young University), Professor, Department of Geosciences, 2004.

V

Van Hoek, Remko, Ph.D. (University of Utrecht), M.B.A.(London School of Economics), B.S.B.A. (Vanderbilt University), Clinical Full Professor, Department of Supply Chain Management, 2018.

W

Williams, Jr., Donnie F., Ph.D. (Georgia Southern University), Clinical Assistant Professor, Department of Supply Chain Management, 2019

Wu, Xintao, Ph.D. (George Mason University), M.E. (Chinese Academy of Space Technology), B.S. (University of Science and Technology), Professor, Department of Computer Science and Computer Engineering, 2014.

Y

Yang, Song, Ph.D., M.S. (University of Minnesota-Twin Cities), M.A. (Nankai University, China), B.A. (Branch College of Nankai, China), Professor, Department of Sociology and Criminology, 2002.

Z

Zhang, Qingyang, Ph.D. (Northwestern University), M.S. (Loyola University–Chicago), B.S. (Beijing Normal University), Assistant Professor, Department of Mathematical Sciences, 2015.

Zhang, Shengfan, Ph.D., M.I.E. (North Carolina State University), B.M. (Fudan University, Shanghai), Assistant Professor, Department of Industrial Engineering, 2011.