



## PREDICTING MOTOCROSS -- Amateur Predictions & Putting The Pro/Am Tiers To The Test

To predict results for the amateur riders, the same principles apply: look at recent results and adjust according to the rider's age. If you take a random amateur, let's say someone who's had success at Loretta's in one of the higher classes, then you can create a forecast based on the Aging Curve to get a snapshot of their likely future.

### **Predicting Loretta's**

The ultimate test for the amateur predictions would be forecasting the qualifying riders and winners of the Loretta Lynn National MX Championship. To whittle down a pre-season field of hundreds or even thousands of competitors to 40 finals participants would be quite a feat. Actually, so much of a feat that going 40 for 40 in any given amateur class would be incredible -- i.e. an unrealistic expectation. It's hard to predict the exact Top 10 in the pros when you're working from only a few dozen realistic candidates, much less hundreds of them. Nevertheless, let's see how the predictions do.

Again, the prediction model is not fancy: following in the footsteps of KATOH and Marcells, the only 2 factors considered

are recent performance and age. To start with, the 5/4/3 weighting is applied. For predicting 2016, then, a rider's 2015 results get a weight of 5, 2014 results a weight of 4, and 2013 results a weight of 3<sup>58</sup>. Once the 5/4/3 weighting is calculated, then the age factor is applied (to each year's results for the number of years prior to 2016)<sup>59</sup>.

First step is to identify the population of riders--out of all candidates that show up in the data set--that are considered as viable candidates for a particular Loretta's class. To be considered for the 450 A predictions, for example, riders had to have competed previously in 450 A, 450 B, 250 A, 250 B, Collegeboy A, and/or Collegeboy B classes. Yes it's possible for a rider to jump all the way from 125 A all the way to 450 A, but the field of potential riders has to be cut off somewhere. Only riders with applicable results in at least 2 out of the past 3 years are included<sup>60</sup>. Also, riders that did not end up riding in the relevant class in 2016 were of course removed (after the fact) as potential candidates in the field (some riders turned pro, did not move up a level, were injured, or did not ride at all for some other reason).

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<sup>58</sup> If the rider didn't have results for a year, then that year/weight are ignored. For example, if a rider had results in 2013 and 2015, but not 2014, then 2015 would be given a weight of 5 and 2013 a weight of 3.

<sup>59</sup> The age factor normalizes results across 2013, 2014, and 2015, as applicable. For the 2015 results it's simple: apply the age factor for one year to translate to their predicted improvement in 2016 -- if the rider was 17 in 2015, the age factor translates from age 17 to age 18. If a rider was 15 in 2013 and 18 in 2016, then the 2013 results would have an age factor applied to translate age 15 to age 16, age 16 to age 17, and age 17 to age 18. The total age factor for a rider across all of his years is displayed in the tables below.

<sup>60</sup> Unfortunately. See the note on Sean Cantrell below. But this method for narrowing the field only seemed to miss 1 relevant rider out of 450 A, 250 A, and Supermini, so that's collateral damage I'm willing to accept.

The 450 A prediction field was narrowed to 626 potential riders that met the inclusion criteria as outlined above. The following table shows the Top 20 predicted riders for the 450 A class (aka “Open Pro Sport”). Also listed are the predicted spots of riders that *did* finish in the Top 20 but weren’t forecast in the Top 20.

*Column “5/4/3” is the weighted results component, “Age Factor” is the compounded age factor, and “Results & Age” is the combination of the 2 -- the prediction for the rider in 2016 (for the data applicable to the relevant Loretta’s class). The “Actual” column lists their finish at Loretta Lynn National MX Championship (“LL”) or their results leading up to LL, such as maybe they had a DNF or DNS at the Regional (or at LL) that left them on the outside looking in.*

One other important note about the 2016 Loretta’s races is that they had an all-time rainstorm that caused a crazy scene during the several days of racing: a lot of the results were determined by who best dealt with the extreme mud. So, the comparison of predictions to actual results has to be taken with an extra grain of salt.

**Table 4.7: Loretta's 450 A Predicted & Actual Top 20 - 2016**

450 A -- out of 626 qualified potential riders

Prediction			Age	Results	Actual
Rank	Rider	5/4/3	Factor	& Age	
1	LORENZO LOCURCIO	58%	8%	50%	8th
2	BRADLEY TAFT	58%	8%	50%	6th
3	BLAKE NEIHEISER	59%	8%	51%	2nd at Regional; no LL result
4	CHANDLER LINDSAY	57%	5%	52%	23rd
5	RAMYLLER ALVES	63%	10%	53%	11th
6	JOEY CROWN	62%	9%	53%	17th at Regional (1/5/DNS)
7	MICHAEL MOSIMAN	63%	10%	53%	3rd
8	JAKE IMPENS	63%	10%	53%	3rd at Regional; no LL result
9	JUSTIN HOEFT	61%	8%	54%	12th at Area (11/DNS)
10	ROOKIE WHITE	64%	10%	54%	9th at Area (3/DNS)
11	JOSIAH HEMPEN	62%	8%	54%	13th
12	Cameron McAdoo	62%	8%	54%	4th
13	HUNTER HILTON	62%	8%	55%	1st at Area, 1st at Regional; no LL result
14	CHASE SEXTON	65%	10%	55%	1st
15	DONNY BROWN	62%	8%	55%	22nd
16	JON AMES	63%	8%	55%	17th
17	Samuel Redman	63%	8%	56%	14th
18	SCHAE THOMAS	63%	8%	56%	1st at Area, 20th at Regional (14/DNS)
19	LUKE PURTHER	65%	9%	56%	12th
20	BRANDON HARTRANFT	65%	9%	56%	7th
21	JAMISON DUCLOS	66%	9%	57%	4th at Area; no Regional or LL result
22	EGAN ROSELL	63%	5%	57%	4th at Area, 14th at Regional (11/16/15)
23	RYAN SURRATT	65%	8%	58%	9th
24	SAM WISE	67%	9%	58%	2nd at Area, 29th at Regional (12/DNS/DNS)
25	MAXWELL MURPHY	67%	9%	58%	25th
26	DARE DEMARTILE	68%	10%	58%	4th at Area; no Regional or LL result
27	ANDY KOST	66%	8%	58%	4th at Area; no Regional or LL result
28	JAYCE PENNINGTON	69%	10%	58%	23rd/DNS/DNS
29	EGAN MASTIN	70%	10%	60%	5th
36	CHALLEN TENNANT	71%	10%	61%	14th/DNS/DNS
39	BROC GOURLEY	65%	4%	61%	19th
40	ASHTON HAYES	69%	8%	62%	16th
65	LANE SHAW	76%	9%	67%	20th
73	NICK SCHNAGL	76%	8%	69%	15th
87	RICHARD JACKSON	81%	9%	73%	18th
92	DUSTIN WINTER	81%	8%	73%	10th
101	COLTON CAMP	82%	8%	75%	27th

While there are definitely some major misses, the Top 20 prediction for the 450 A Loretta's did manage to identify 11 riders who actually finished in the Top 20 and 2 more who finished just outside (22<sup>nd</sup> and 23<sup>rd</sup>). Out of 600+ contenders, that seems satisfactory. Also, from the Top 20, the 7 riders who didn't make it to the final either seemed to qualify but didn't ride (Blake Neiheiser, Jake Impens, Hunter Hilton) or had a DNS in their qualifying (Joey Crown, Justin Hoeft, Rookie White, Schae

Thomas) that ruined their results.

Notable misses include Egan Mastin who finished in 5<sup>th</sup> yet was only predicted in 29<sup>th</sup> and Dustin Winter who finished 10<sup>th</sup> but was way down the list at 92<sup>nd</sup>. Mastin didn't have any results in 2013, and his 2014 numbers weren't quite as good as his 2015 ones. If we were judging only by 2015, Mastin would have been in the Top 10: so it goes when making bulk predictions -- you can't catch all the irregularities. Winter's prediction/results are tough to explain -- he was OK in 2013, pretty good in 2014, and OK again in 2015 (5<sup>th</sup> at Loretta's in 250 B Limited, which is solid, but doesn't scream "Top 10 450 A next year"). He's also a bit older, so the age factor didn't help his prediction as much as most other riders'.

The biggest miss, though, was Sean Cantrell, who finished 2<sup>nd</sup> yet wasn't included in the field of possible 450 A riders because he had only 1 year of 450, 250, or Collegeboy results leading up to 2016. In retrospect, perhaps the assumption that the applicable 450 A riders would have at least 2 seasons of 250 (or 1 season of 250 + 1 season of 450) before being realistic contenders at 450 A was too aggressive. If Cantrell *had* been included, however, he wouldn't have been ranked at the top of the class -- he'd have been right in the middle, in the 300's out of the 626 riders. Looking back at his results from the prior 3 years, they don't jump out as a kid who's going to rocket all the way up to #2 in 450 A. His 2015 -- 9<sup>th</sup> at LL 250 B -- was OK but like with Winter, didn't scream 450 A success; his 2014 (1<sup>st</sup> in Supermini 1) is impressive, but 2 years from Supermini to 450 A is *much* quicker than expected; his 2013 (25<sup>th</sup> in Mini Sr.) was again OK but doesn't stand out.

Although the numbers didn't love Cantrell, the scouting community doesn't agree, as he's been part of top teams supported by Suzuki, Kawasaki, and KTM. He backed up his

Loretta's success with 450 A and 250 Pro Sport wins at the Mini Olympics in November 2016. He's expected to turn pro with KTM in 2017. Just goes to show that the two viewpoints aren't always going to match.

The 250 A prediction field was narrowed to 1,289 potential riders that met the criteria to be included: rode 250 A, 250 B, 125 A, 125 B, Schoolboy A, Schoolboy B, Supermini, and/or Mini Sr. in at least 2 of the prior 3 years. The table below shows the Top 20 predicted riders for the 250 A finals combined with the actual Top 20 finishers.

**Table 4.8: Loretta's 250 A Predicted & Actual Top 20 - 2016**

250 A -- out of 1289 qualified potential riders

Prediction Rank	Rider	Age 5/4/3	Factor	Results & Age	Actual
1	JERRY ROBIN	56%	8%	49%	31st (8/DNF/DNF)
2	CHANDLER LINDSAY	56%	5%	51%	11st
3	JUSTIN HOEFT	63%	8%	55%	8th at Area (8/DNS)
4	DONNY BROWN	63%	8%	56%	20th
5	Cameron McAdoo	63%	8%	56%	3rd
6	LORENZO LOCURCIO	64%	8%	56%	4th
7	JOSIAH HEMPEN	64%	8%	57%	13th
8	Dylan Summerlin	61%	4%	57%	1st at Area; no Regional or LL results
9	GAGE MAST	65%	8%	57%	11th at Area (10/13)
10	SCHAE THOMAS	65%	8%	58%	DNF at Area
11	Joshua Prior	64%	6%	58%	9th at Area (6/DNF)
12	BRADLEY TAFT	65%	8%	58%	1st
13	HUNTER HILTON	65%	8%	58%	1st at Area, 3rd at Regional; no LL results
14	BRANDON GOURLEY	69%	9%	60%	21st
15	THOMAS COLUZZI	66%	5%	60%	7th at Area
16	SAM WISE	69%	9%	61%	5th at Area, DNF at Regional
17	Chad Wages	58%	-2%	61%	36th (DNF/DNS/DNS)
18	TIMMY BADOIR	66%	5%	61%	3rd at Area, 12th at Regional
19	RYAN SURRATT	70%	8%	62%	3rd at Area, 4th at Regional; no LL result
20	Addison Emory	68%	5%	62%	3rd at Area, 7th at Regional
28	William Lofstrom	72%	8%	64%	18th
35	EGAN MASTIN	76%	10%	66%	10th
52	JAMES ANDERSON JR.	75%	8%	68%	12th
71	CHALLENGER TENNANT	82%	10%	72%	16th (11/4/DNF)
90	ASHTON HAYES	81%	8%	74%	15th
98	LANE SHAW	83%	9%	74%	19th
112	MICHAEL MOSIMAN	86%	10%	76%	6th
118	JON AMES	84%	8%	76%	14th
173	RAMYLLER ALVES	91%	10%	81%	9th
174	LUKE PURTHER	90%	9%	81%	5th
245	CHASE SEXTON	99%	10%	89%	2nd
262	JOEY CROWN	99%	9%	90%	8th
278	SEAN CANTRELL	102%	10%	92%	7th
427	KALEB TAYLOR	115%	10%	105%	17th

Again the prediction seems reasonable, though not quite as

sharp as for the 450 A. Maybe that's a similar effect as with the Lites Pro class where the larger field makes predictions more difficult. Out of the Top 20 predicted riders, 7 finished in the Top 20 (plus Jerry Robin who finished 8<sup>th</sup> in Moto 1 but DNF/DNF for the other 2, and Chad Wages who went DNF/DNS/DNS). Of the 11 riders from the Top 20 who didn't qualify, 3 had good results at Area and/or Regional qualifiers but didn't ride Loretta's (Dylan Summerlin, Hunter Hilton, Ryan Surratt) and 4 had DNS/DNF races during qualifying that ruined their overall results (Justin Hoefft, Schae Thomas, Joshua Prior, Sam Wise).

For the 250 A predictions, there was another notable miss for the 2<sup>nd</sup> place finisher: Chase Sexton was included in the rankings, but was listed down at #245 -- still in the top 20% of the potential riders, but not where you'd expect for someone who would end up in 2<sup>nd</sup>. Sexton's prediction for the 450 A class was more in line with his finish (14<sup>th</sup> versus actual finish of 1<sup>st</sup>), but the 250 A predictions reference his results from the mini and 125 bikes, which dragged the prediction down. Like Sean Cantrell above, Sexton's prior seasons were not exactly remarkable -- he did have a 2<sup>nd</sup> place at 250 B in 2015, but that was paired with a 12<sup>th</sup> in Schoolboy B/C. Prior to that he was 3<sup>rd</sup> at LL in Supermini, and another year before that he placed 4<sup>th</sup> in the finals of Mini Sr. Limited.

Along with Sexton in the "miss" category are Michael Mosiman (6<sup>th</sup>, predicted #112), Ramyller Alves (9<sup>th</sup>, predicted #173), Luke Purther (5<sup>th</sup>, predicted #174), Joey Crown (8<sup>th</sup>, predicted #262), and Sean Cantrell (7<sup>th</sup>, predicted #278). Definitely mixed results for the 250 A predictions. Perhaps this list is focusing too much on the negative, considering that overall the hits do seem to outweigh the misses, especially the hundreds of riders who didn't make Loretta's and were predicted not to.

Moving down into the Supermini predictions, will the accuracy be diminished as the riders' ages get younger and the potential classes (that the riders are pulled from) increase in number and diversify?

The Supermini 1 (12-15) prediction field was narrowed to 811 potential riders that met the criteria to be included: rode Supermini, Mini Sr., Mini, Mini Jr., 65 Sr., 65cc in at least 2 of the prior 3 years. The table below shows the Top 20 predicted riders for the Supermini 1 finals combined with the actual Top 20 finishers.



**Table 4.9: Loretta's Supermini 1 (12-15) Predicted & Actual Top 20 - 2016**

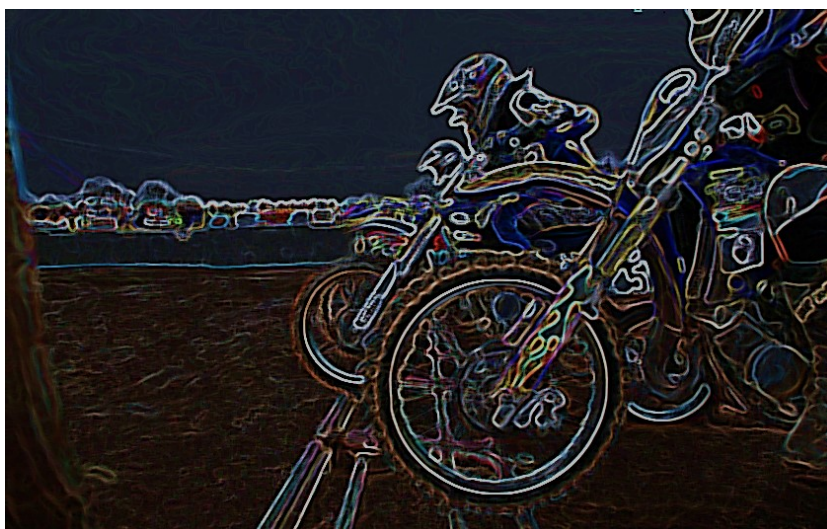
Supermini 1 (12-15) -- out of 811 qualified potential riders

Prediction		Age		Results	
Rank	Rider	5/4/3	Factor	& Age	Actual
1	TOMMY RIOS	135%	13%	122%	40th (DNF/DNS/DNS)
2	SETH HAMMAKER	136%	13%	124%	1st
3	LANCE KOBUSCH	136%	13%	124%	26th (2/2/DNS)
4	Jarrett Frye	139%	14%	125%	11th
5	HARDY MUNOZ	138%	13%	126%	5th
6	TY MASTERPOOL	141%	14%	127%	35th (13/15/DNS)
7	DEVIN XINDARIS	140%	13%	127%	1st at Area, 1st at Regional; no LL result
8	JOSHUA BOAZ	142%	14%	128%	8th
9	CARSON MUMFORD	141%	13%	129%	2nd at Area, 1st at Regional; no LL result
10	BRYCE HANSEN	144%	13%	131%	33rd (10/DNF/DNF)
11	AUSTIN BLACK	143%	11%	132%	1st at Area, DNS at Regional
12	DANNY CONGDON	146%	14%	132%	4th at Area, 16th at Regional
13	COLE WILLIAMS	144%	13%	132%	37th (DNF/33/DNF)
14	IZAIH CLARK	147%	14%	133%	4th at Area; no Regional or LL results
15	ASHTON BLOXOM	146%	13%	133%	24th
16	JACK CHAMBERS	149%	14%	135%	21st
17	LOGAN BOYE	148%	13%	135%	6th
18	JAKE TRICCO	149%	14%	136%	3rd at Area, 9th at Regional
19	BRANDEN WALTHER	150%	14%	136%	4th at Area, 5th at Regional
20	JACE KESSLER	150%	14%	136%	3rd at Area, 7th at Regional
21	JACK ROGERS	149%	13%	136%	40th (DNF/DNF/DNS)
22	JUAN VALDERRAMA	149%	13%	137%	15th
23	AIDEN TIJERO	151%	14%	137%	9th
26	ZACKERY DOBBS	150%	13%	137%	12th
27	TJ USELMAN	150%	13%	137%	17th
30	Jo Shimoda	153%	14%	139%	2nd
32	MAX MILLER	153%	14%	139%	3rd
34	TYSON JOHNSON	153%	13%	140%	10th
35	Cristopher Torres	153%	13%	140%	7th
43	STILEZ ROBERTSON	156%	14%	143%	13th
117	PARKER EARL	167%	14%	153%	20th
160	CLAY QUICK	171%	14%	157%	19th
312	DEGAN PALMER	185%	14%	171%	18th

The Supermini 1 predictions look like an improvement over the 250 A predictions. Could be due to having “only” 811 potential qualifiers for Supermini 1 instead of over 1,200 riders for 250 A. Out of the Top 20 predicted, only 5 finished in the Top 20, but 5 others had DNF/DNS that spoiled their contest (including Lance Kobusch, who was predicted at #3 and had 2/2/DNS). That leaves 8 from the Top 20 who didn't ride at the Loretta Supermini 1 finals, and 3 of them had good Area/Regional results but didn't ride at Loretta's (Devin

Xindaris, Carson Mumford, Izaih Clark) and 1 who had a DNS at Regional (Austin Black).

The big misses for the Supermini 1 predictions were not quite as big as for 250 A (or even for 450 A). Jo Shimoda in 2<sup>nd</sup> and Max Miller in 3<sup>rd</sup> fell outside the predicted Top 20, but they were relatively close, predicted 30<sup>th</sup> and 32<sup>nd</sup>, respectively. The only riders who were predicted lower than 43<sup>rd</sup> but still finished in the Top 20 at Loretta's came in at 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> on race day. To have 17 of the Top 20 finishes in the top 50 or so predicted riders (out of 800+) is a success for these predictions. Only time will tell if the simple forecasting principles will pan out in future years.



### PREDICTING MOTOCROSS -- SX Full-Season Rookies

In many ways the amateur predictions detailed above showed success but also potential for improvement. One question that comes out of those amateur predictions relates to the common thread between the major forecasting misses on Chase Sexton and Sean Cantrell: they both jumped from the top of the 250 B