

UW SCHOOL OF MEDICINE GRANT WRITING EFFORT REPORT

RESPONSE TO THE FACULTY SENATE CLASS C RESOLUTION

INTRODUCTION

In May 2018, the Faculty Senate passed a Class C Resolution addressing faculty effort expended to generate grant support. In that Resolution, the Deans of the School of Public Health and the School of Medicine were requested to work with their elected faculty councils to assess the fraction of time spend preparing grant proposals, to address the adequacy of faculty salary support for preparing grant proposals and to suggest a path forward if salary support does not agree with the time preparing grant applications. The office of the dean of medicine and the elected faculty council on research and graduate education collaborated in this assessment.

METHODS

Grants/Contracts to be Surveyed

Information from the University of Washington's System to Administer Grants Electronically (SAGE) was used to generate a list with additional data about individual grant or contract proposals¹ submitted in fiscal year 2018 (July 1, 2017 through June 30, 2018)² that included School of Medicine faculty³ as either the Principal Investigator (PI), a Multiple PI, or as a Co-Investigator. The initial list based on these criteria returned 4,049 proposals.

This initial list included grant or contract proposals to all sponsor types, of all application types, and for all requested amounts. Grant or contract proposals that were not a new or competing application type⁴ or had a total requested amount for all periods of the proposal less than \$100,000 were excluded from the survey set during data preparation. Proposals noted in SAGE as a "IPA/JPA/Staff Assignment" program type were also excluded from the survey data set. Finally, proposals that had already been included in a similar survey administered by the School of Public Health were excluded from the School of Medicine's survey data set. The above exclusions reduced the final list to 1,885 proposals.

Faculty Surveyed

The survey data set of 1,885 proposals was organized to represent individual School of Medicine faculty members and the one or more proposals where the faculty member was recorded in SAGE as the PI, Multiple PI, or Co-Investigator. Organized in this manner, the proposals were distributed across 872 individual faculty members who consequently represented the population of interest for this survey. Note that organized in this manner, one proposal could be represented within the activity of more than one faculty member within this survey data set.

The faculty members included in the survey set ranked from Assistant Professors to Professors and included faculty groups including Tenure and Non-Tenure Track Professorships, Research Professorships, Clinical Professorships, and Emeritus/Retired. Although included in the initial survey set, the Clinical Professorship or Emeritus/Retired categories were excluded from later data analyses. Only those faculty whose salary is provided by grants that are administered by the University of Washington were included in the survey.

Data Collection Instrument

¹ "Proposal" operationalized as a distinct eGC1 number in SAGE

² Based on the date of first submission of a proposal to the UW Office of Sponsored Programs (OSP) for processing

³ Primary appointment as faculty in a School of Medicine organization code (3-04-XX-XX-XX-X)

⁴ Application Type in SAGE as "New", "Competing Renewal", "Competing Revision", "Competing Supplement", or "Resubmission (Previously Denied)"

The instrument used to collect the data for this survey was based on a questionnaire originally developed by the School of Public Health for their survey and later shared with the School of Medicine for the purpose of this survey. The questionnaire had two parts: (1) two initial questions about overall support sources and the number of hours in a usual work week, and (2) a set of eleven questions to provide estimated hours spent in the preparation of specific parts of a grant or contract proposal, and an option to provide comments regarding the preparation of a grant or contract proposal. An additional question about the number of other people who spent time on the proposal preparation was also included when the faculty member was the PI for a proposal.

High proposal count faculty: In reviewing the survey data set for the 872 faculty members, it was observed that many of the faculty members had several proposals included in the data set. Although 65% of the faculty members had between one and three proposals to report on for the survey, almost 30% of the faculty members had between four and nine proposals, and the remaining 5% of faculty members had ten or more proposals in the survey data set. The highest number in the survey data set for a single faculty member to report on was 38 proposals.

During early pilot testing of the instrument, feedback from a small set of testers noted that the time spent and nature of the preparation for NIH Career Development (K funding mechanisms) and Fellowships (F funding mechanisms), and specifically Training Grants (T funding mechanisms) were qualitatively different in comparison to the time and preparation for other proposals as a PI. The pilot feedback further noted that the time spent and nature of preparation for a proposal as a Multiple PI and as a Co-Investigator also differed from when preparing as a PI and also from each other. The five groupings of proposals identified during testing and questionnaire development were:

1. Proposals with the faculty member as Principal Investigator, excluding NIH K, F, or T funding mechanisms
2. Proposals with the faculty member as Principal Investigator for NIH K or F funding mechanisms
3. Proposals with the faculty member as Principal Investigator for NIH T funding mechanisms
4. Proposals with the faculty member as Multiple PI
5. Proposals with the faculty member as Co-Investigator

Adjustment to the questionnaire: Based on feedback from faculty testers, the structure and wording of the questionnaire was adjusted from the original version provided by the School of Public Health to mitigate a potential respondent burden for many faculty members. After adjustment, the resulting questionnaire presented the two initial questions about overall support source and the number of hours in an average work week, and the questions about hour-estimates for specific parts of proposal preparation were presented once for each grouping of proposals with instructions to provide an hour estimate for a typical single proposal representative of the ones in the group. Because there were five possible groups of proposals, no faculty member was presented with the set of hour-estimate questions more than five times in this survey.

Electronic data capture: The survey instrument was formatted for electronic data capture via REDCap, made available through the Institute of Translational Health Sciences (ITHS)⁵. This allowed for the customization of a questionnaire to individual faculty members based on their specific lists and groups of proposals. This feature was key to the design of the survey and allowed for data collection in cases where a faculty member had multiple proposals.

A copy of the instrument can be found in the Appendix.

Data Collection Methodology

The survey instrument and data collection were managed via REDCap, a web-based platform that allowed for the importing of source data into REDCap to allow for customization of questionnaires, e-mailing of a cover letter and a unique questionnaire link to individual faculty members in the survey set, collection and tracking of respondent data, and the

⁵ Supported through NCATS/NIH grants UL1TR002319, KL2TR002317, and TL1TR002318

distribution of reminder e-mails to non-respondents. Copies of the survey invitation and reminder templates can be found in the Appendix.

The survey’s e-mail invitation was sent to each of the 872 faculty members March 8, 2019. Each e-mail included a cover letter signed by the School of Medicine’s Vice Dean for Research and Graduate Education and by the Chair for the School of Medicine’s Council on Research and Graduate Education. All invitation e-mails included a link to a faculty member’s personalized online questionnaire. The questionnaire was able to save responses and completion progress, allowing respondents to return to the questionnaire and continue from where the respondent may have stopped. Once a questionnaire was submitted, the respondent could download a PDF version of the completed questionnaire; responses could not be altered after a survey was submitted.

A reminder e-mail was sent via REDCap on March 15, 2019 to survey participants who had not yet completed the survey by that time. The survey remained open until March 25, 2019, after which time the online questionnaire was no longer available to survey participants.

RESULTS

Response Rate

Overall, this survey experienced a 26% response rate (226 completed survey out of the 872 that were sent). There were an additional 54 surveys that were partially completed but not submitted by the time the survey closed, indicating an overall initial participation percentage of 32% for this survey. Table 1 provides the number of questionnaire sent and that were either complete or partially complete by faculty group, for all sponsor types, and for federal sponsors.

Responsiveness to Faculty Senate Resolution This survey gathered information about the preparation of grant and contract proposals to all types of sponsors. However, the subset of the survey data that is responsive to the Faculty Senate Resolution is the subset that informed the preparation of grant and contract proposals to federal sponsors, and is not inclusive of the proposal preparation efforts of Clinical Professorships and Emeritus/Retired faculty members.

Of the main survey set of 838 faculty members (excluding Clinical and Emeritus/Retired), there were 656 who had proposals to federal sponsors; a completed survey was received from 189 of these faculty. Accounting for the exclusion of Clinical and Emeritus/Retired faculty and a focus on proposals to federal sponsors, this survey experienced an adjusted response rate of 29% (189 complete out of the 656 that were sent). Considering the partially completed surveys, there was an adjusted initial participation of 35% (189 completed plus the 42 partially completed out of the 656 that were sent).

Table 1. SOM Grant Writing Survey Effort Response Rate	All Sponsor Types ¹				Federal Sponsors ¹			
	# Sent	Respondents			# Sent	Respondents		
		# Complete	% RR	# Partial Complete		# Complete	% RR	# Partial Complete
Eligible School of Medicine Faculty	872	226	26%	54	683	194	28%	44
Acting Appointments	27	8	30%	3	22	7	32%	3
Acting Assistant Professor-Temp	26	8	31%	3	21	7	33%	3
Acting Associate Professor	1	0	0%	0	1	0	0%	0
Non-Tenure Track Professorships	515	135	26%	29	381	116	30%	22
Asst Professor Without Tenure	131	34	26%	10	99	32	32%	7
Assoc Professor Without Tenure	165	41	25%	8	122	33	27%	7

Professor Without Tenure	219	60	27%	11		160	51	32%	8
Research Professorships	116	31	27%	8		95	27	28%	7
Research Assistant Professor	48	13	27%	3		43	12	28%	3
Research Associate Professor	44	11	25%	4		38	10	26%	3
Research Professor	24	7	29%	1		14	5	36%	1
Tenure Track Professorships	180	44	24%	12		158	39	25%	10
Assistant Professor	19	3	16%	2		15	3	20%	0
Associate Professor	36	11	31%	2		35	10	29%	2
Professor	125	30	24%	8		108	26	24%	8
Clinical Professorships²	18	4	22%	1		12	2	17%	1
Clinical Assistant Professor-Salaried	10	1	10%	0		5	0	0%	0
Clinical Associate Professor-Salaried	4	2	50%	0		4	2	50%	0
Clinical Professor-Salaried	4	1	25%	1		3	0	0%	1
Emeritus/Retired²	16	4	25%	1		15	3	20%	1
Associate Professor--Retired	1	1	100%	0		1	1	100%	0
Professor Emeritus	11	2	18%	1		10	1	10%	1
Professor--Retired	1	0	0%	0		1	0	0%	0
Research Assoc Prof Emeritus	1	0	0%	0		1	0	0%	0
Research Professor Emeritus	2	1	50%	0		2	1	50%	0

¹ Respondent data representing proposals to federal sponsors are used in subsequent analyses. Data to all sponsors are provided for context and are representative of the overall survey experience.

² Although included in the original survey data set, respondent data from faculty members of the Clinical Professorship and Emeritus/Retired groups are excluded from subsequent analyses.

Percent of SOM Faculty Who Prepared a Grant/Contract in FY2018

Surveys were sent to 656 faculty members, and completed surveys were returned by 189 respondents. Of these 189 completed questionnaires, 68% included data about the preparation of (non-NIH K/F/T) grant or contract proposals as a Principal Investigator to a federal sponsor. Approximately 19% of the survey responses provided information about the preparation of NIH K, F, or T funding mechanisms as a Principal Investigator on the proposal. Almost two-thirds (62%) of the surveys also provided information about preparation of a proposal as a Co-Investigator, and 14% addressed the preparation effort as a Multiple PI on a federal grant or contract proposal.

Table 2 represents the distribution of federal grant or contract proposal preparation data across the various faculty groups and by role on the proposal.

Table 2. Number of SOM Faculty who worked on a Federal Grant/Contract Proposal as Principle Investigator, Multiple PI, or Co-Investigator in FY18	# Sent	# Complete	As the Principal Investigator						As Multiple PI		As Co-Invest	
			All Except NIH K/F/T Types		NIH K/F Types		NIH T Types		#	%	#	%
			#	%	#	%	#	%				
Eligible SOM Faculty	656	189	129	68%	31	16%	5	3%	26	14%	118	62%
Acting Appointments	22	7	4	57%	2	29%	0	0%	0	0%	3	43%
Acting Assistant Professor-Temp	21	7	4	57%	2	29%	0	0%	0	0%	3	43%
Acting Associate Professor	1	0	0	0%	0	0%	0	0%	0	0%	0	0%
Non-Tenure Track Professorships	381	116	79	68%	16	14%	3	3%	16	14%	77	66%
Asst Professor Without Tenure	99	32	25	78%	3	9%	0	0%	3	9%	18	56%
Assoc Professor Without Tenure	122	33	21	64%	3	9%	0	0%	4	12%	24	73%
Professor Without Tenure	160	51	33	65%	10	20%	3	6%	9	18%	35	69%
Research Professorships	95	27	17	63%	1	4%	0	0%	1	4%	18	67%
Research Assistant Professor	43	12	9	75%	0	0%	0	0%	0	0%	8	67%

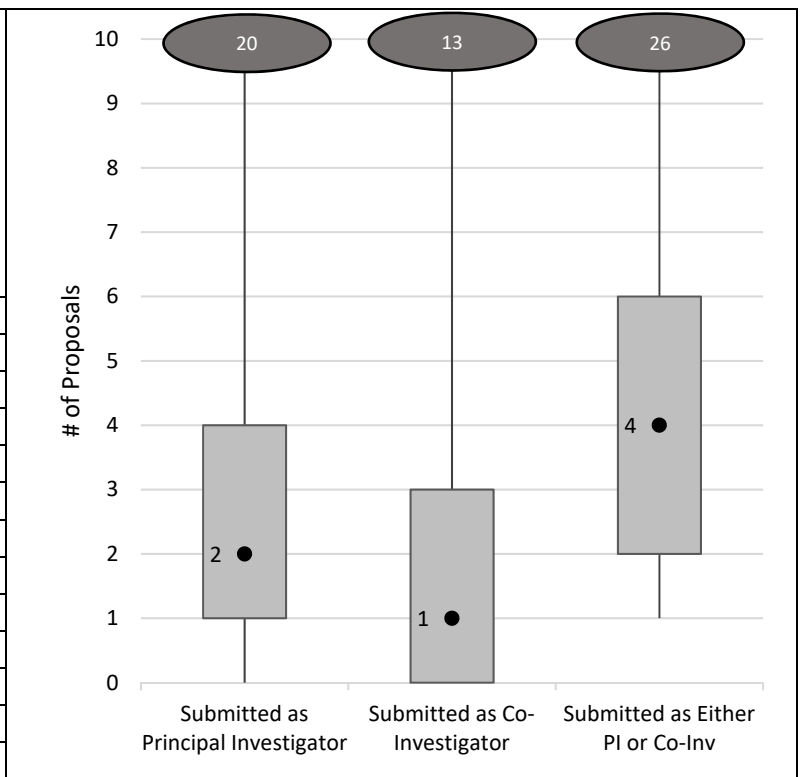
Research Associate Professor	38	10		5	50%	1	10%	0	0%		1	10%		7	70%
Research Professor	14	5		3	60%	0	0%	0	0%		0	0%		3	60%
Tenure Track Professorships	158	39		29	74%	12	31%	2	5%		9	23%		20	51%
Assistant Professor	15	3		2	67%	2	67%	0	0%		0	0%		1	33%
Associate Professor	35	10		8	80%	4	40%	0	0%		3	30%		3	30%
Professor	108	26		19	73%	6	23%	2	8%		6	23%		16	62%

Number of Federal Grant/Contract Proposals Submitted in FY2018

This survey’s responses included 189 SOM faculty who submitted at least one federal grant/contract proposal in FY2018 as either the Principal Investigator (including as a Multiple PI) or as a Co-Investigator. Overall, these 189 SOM faculty submitted a median of 2 proposals as a Principal Investigator and 1 proposal as a Co-Investigator in FY2018.

As shown in Table 3, however, there was a degree of variance in the number of proposals submitted per faculty member, with three-quarters of respondents having submitted up to 4 federal proposals (75th percentile) as a Principal Investigator and/or up to 3 federal grant/contract proposals (75th percentile) as a Co-Investigator. This range of proposal submissions contributed to an overall median of 4 federal grant/contract proposals per faculty member in FY2018, regardless of role on the proposal.

# of Proposals	As Principal Investigator ⁶		As Co-Investigator		Total	
	#	%	#	%	#	%
0	24	13%	54	29%	0	0%
1	43	23%	52	28%	23	12%
2	30	16%	35	19%	31	16%
3	29	15%	17	9%	36	19%
4	21	11%	16	8%	16	8%
5	13	7%	6	3%	24	13%
6	7	4%	2	1%	18	10%
7	8	4%	2	1%	5	3%
8	3	2%	2	1%	10	5%
9	2	1%	1	1%	3	2%
10	4	2%	1	1%	5	3%
11 +	5	3%	1	1%	18	10%



Percentage of Non-Federal Support

The survey asked all respondents to provide, to the best of their knowledge, the percentage of their base salary for the past year that was funded through non-federal sources. Overall, half of faculty respondents indicated that between 15% (25th percentile) and 60% (75th percentile) of their base salary in the past year was from non-federal sources (median of

⁶ Includes NIH K-types, F-types, T-types, and Multiple PI proposals

32%). Table 4 presents the responses by faculty type, with Table 4a providing the distributions by 10% increments (e.g., 0%-9%, 10%-19%) and Table 4b providing the central tendencies and percentiles of the reported percentages.

Table 4a. Reported percentage of non-federal funding to FY2018 base salaries – by 10% intervals	n	Non-federal % of base salary									
		< = 9%	10%-19%	20%-29%	30%-39%	40%-49%	50%-59%	60%-69%	70%-79%	80%-89%	> = 90%
Eligible SOM Faculty Respondents	189	21%	7%	16%	12%	7%	12%	7%	5%	3%	10%
By Faculty Type											
Acting Appointments	7	43%	0%	43%	0%	0%	14%	0%	0%	0%	0%
Acting Assistant Professor-Temp	7	43%	0%	43%	0%	0%	14%	0%	0%	0%	0%
Non-Tenure Track Professorships	116	18%	9%	18%	12%	6%	7%	8%	8%	4%	10%
Asst Professor Without Tenure	32	25%	16%	22%	0%	6%	13%	6%	3%	0%	9%
Assoc Professor Without Tenure	33	9%	6%	15%	15%	6%	6%	15%	12%	3%	12%
Professor Without Tenure	51	20%	6%	18%	18%	6%	4%	4%	8%	8%	10%
Research Professorships	27	37%	15%	7%	11%	0%	15%	0%	0%	0%	15%
Research Assistant Professor	12	58%	8%	0%	17%	0%	8%	0%	0%	0%	8%
Research Associate Professor	10	30%	10%	10%	0%	0%	20%	0%	0%	0%	30%
Research Professor	5	0%	40%	20%	20%	0%	20%	0%	0%	0%	0%
Tenure Track Professorships	39	13%	0%	10%	15%	15%	23%	13%	0%	3%	8%
Assistant Professor	3	0%	0%	0%	33%	0%	0%	33%	0%	0%	33%
Associate Professor	10	20%	0%	0%	20%	20%	20%	20%	0%	0%	0%
Professor	26	12%	0%	15%	12%	15%	27%	7%	0%	4%	8%

A preliminary review of these aggregated responses suggested the possibility of some misinterpretation of this survey question. To illustrate, two of the three tenure-track professorship categories reported a minimum of 0% base salary from non-federal sources; tenure-track professorships always include non-federal funding sources. A quick review of the collective FY2018 payroll data for these 189 respondents indicated that all tenure-tracked appointments had some base salary funding from a non-federal sourced budget.

Table 4b. Reported percentage of non-federal funding to FY2018 base salaries – via measures of central tendency and percentiles	n	Mean % non-Fed	Std Dev	Min	25 th Pctl	Median % non-Fed	75 th Pctl	Max
Eligible SOM Faculty Respondents	189	38%	30%	0%	15%	32%	60%	100%
By Faculty Type								
Acting Appointments	7	18%	18%	0%	2%	25%	25%	50%
Acting Assistant Professor-Temp	7	18%	18%	0%	2%	25%	25%	50%
Non-Tenure Track Professorships	116	39%	30%	0%	17%	30%	61%	100%
Asst Professor Without Tenure	32	32%	30%	0%	10%	23%	50%	100%
Assoc Professor Without Tenure	33	46%	30%	0%	20%	45%	70%	100%
Professor Without Tenure	51	39%	31%	0%	19%	30%	68%	97%
Research Professorships	27	30%	33%	0%	4%	15%	50%	100%
Research Assistant Professor	12	21%	30%	0%	0%	5%	32%	100%
Research Associate Professor	10	43%	41%	0%	5%	35%	81%	100%
Research Professor	5	27%	16%	13%	15%	20%	38%	50%
Tenure Track Professorships	39	44%	24%	0%	30%	40%	56%	100%
Assistant Professor	3	64%	34%	33%	47%	60%	80%	100%

Associate Professor	10	39%	22%	0%	33%	40%	55%	66%
Professor	26	43%	24%	0%	28%	43%	55%	90%

Average Hours in a Faculty Work Week

One of the initial survey questions asked respondents to provide the number of hours they consider representative of their average work week. The response data indicated that a 55-hour work week was the median for these SOM faculty, which calculated to a 2,640 hour work year (based on 48 weeks, or 11 months of service each academic year for 12-month faculty).

As shown in Table 5, survey respondents were fairly consistent in the hours reported as an average work week, both in the range (25th percentile and 75th percentile were 10 hours apart) and across faculty types (three of the four types reported medians of 55 hours per week, with the fourth reporting 50 hours per week).

Table 5. Number of Hours in an Average Work Week by Faculty Type (n=189)	n	Per Week							Annual ⁷ Median # Hours
		Mean # Hours	Std Dev	Min	25 th Pctl	Median # Hours	75 th Pctl	Max	
Per SOM Faculty	189	57	11	35	50	55	60	112	2,640
By Faculty Type									
Acting Appointments	7	55	6	50	50	55	59	65	2,640
Acting Assistant Professor-Temp	7	55	6	50	50	55	59	65	2,640
Non-Tenure Track Professorships	116	58	10	40	50	55	60	91	2,640
Asst Professor Without Tenure	32	60	11	48	50	58	61	91	2,760
Assoc Professor Without Tenure	33	54	7	40	50	52	60	75	2,496
Professor Without Tenure	51	59	10	40	50	60	60	80	2,880
Research Professorships	27	54	13	35	47	50	60	100	2,400
Research Assistant Professor	12	53	11	40	47	50	56	80	2,400
Research Associate Professor	10	52	9	40	47	53	59	65	2,520
Research Professor	5	60	24	35	50	56	60	100	2,688
Tenure Track Professorships	39	60	13	48	50	55	63	112	2,640
Assistant Professor	3	53	3	50	53	55	55	55	2,640
Associate Professor	10	54	5	50	50	53	59	60	2,520
Professor	26	63	15	48	53	60	65	112	2,880

Time Needed to Write an Individual Grant/Contract Proposal

The survey response data indicated that the median time a faculty member spent in fiscal year 2018 per federal grant or contract proposal, regardless of role or proposal type, was overall 110 hours (95% confidence interval between 87 and 139 hours⁸). Overall, respondent data suggested that the development of the grant concept, and the writing of the research plan represented the highest areas of effort during proposal preparation.

Table 6 summarizes the median time spent per faculty member per proposal on the different parts of proposal preparation. It is important to note that the measures reported in Table 6 indicate a notable degree of variance in time

⁷ Based on a 48-week work year.

⁸ Confidence interval of the median calculated via a non-parametric approach for percentiles, per Statistical Intervals, by Hahn and Meeker, 1991.

estimates provided by respondents. Given this, the median corresponding to the 25th and 75th percentiles may provide the most representative measures of central tendency and variance for these data.

Table 6. Time Spent per Faculty Preparing Specific Parts of Federal Grant/Contract Proposal in FY2018 (n=189)	Mean # Hours	Std Dev	Min	25th Pctl	Median # Hours	75th Pctl	Max
All Parts Per Faculty per Federal Grant/Contract Proposal	192	286	0.00	54.2	110	208	2,474
Developing grant concept/content	53.0	173	0.00	8.00	20.0	40.0	2,000
Staff/investigator organization	11.4	19.0	0.00	2.00	5.00	13.3	200
Budget development	7.29	8.70	0.00	2.00	4.50	8.00	50.0
Budget justification	4.17	5.27	0.00	1.00	2.00	5.00	36.0
Biosketches	3.94	4.12	0.00	1.50	2.00	5.00	28.0
Other Admin Docs	10.5	13.4	0.00	2.67	5.00	13.0	100
Letters of Support	4.44	14.8	0.00	1.00	2.00	4.60	200
Literature Review	22.2	33.1	0.00	4.00	10.0	20.0	200
Research Plan	66.4	98.3	0.00	15.0	33.0	80.0	800
Appendix	3.25	7.21	0.00	0.00	1.00	3.00	60.0
Other Tasks	5.47	20.9	0.00	0.00	0.00	2.00	240

Total SOM Faculty Effort Preparing Grants in FY2018

As previously noted, the survey response data indicated an overall median of 110 hours per faculty member per federal proposal submitted in fiscal year 2018. Table 6 summarizes the median time spent across all parts of proposal preparation by faculty group and by role on the proposal.

Review of these data suggests variability in the time spent on proposal preparation based on the type of role in the proposals (PI, Multiple PI, Co-Investigator) and by faculty type. Principal Investigator roles involved a median effort of 195 hours per proposal, compared to the median of 37.5 hours when the faculty member is a co-investigator. Faculty who were Principal investigators on a proposal noted the highest number of median hours for NIH training grants (T-mechanism; 343 hours per proposal), and the lowest for NIH Career Development and Fellowships (K or F mechanisms; median 46 hours per proposal).

Table 7. Time Spent per Faculty Member on the Preparation of Federal Grant/Contract Proposals in FY2018	n	Mean # Hours	Std Dev	Min	25th Pctl	Median # Hours	75th Pctl	Max
Per SOM Faculty per Proposal	189	192	286	0.00	54.2	110	208	2,474
By Faculty Type								
Acting Appointments	7	166	132	37.3	41.8	188	242	370
Acting Assistant Professor-Temp	7	166	132	37.3	41.8	188	242	370
Non-Tenure Track Professorships	116	204	316	0.00	58.8	115	236	2,474
Asst Professor Without Tenure	32	327	524	20.0	85.5	158	319	2,474
Assoc Professor Without Tenure	33	152	173	0.00	32.5	87.3	181	731
Professor Without Tenure	51	159	164	8.00	49.3	97.5	202	758
Research Professorships	27	217	323	14.5	59.0	96.3	211	1,523
Research Assistant Professor	12	191	243	28.0	63.8	86.2	170	776
Research Associate Professor	10	303	458	17.8	69.0	151	216	1,523
Research Professor	5	108	103	14.5	38.0	76.3	138	272
Tenure Track Professorships	39	145	161	8.00	51.4	91.0	177	889
Assistant Professor	3	97.2	85.4	37.0	48.3	59.7	127	195
Associate Professor	10	98.1	57.6	19.0	60.1	92.6	155	171

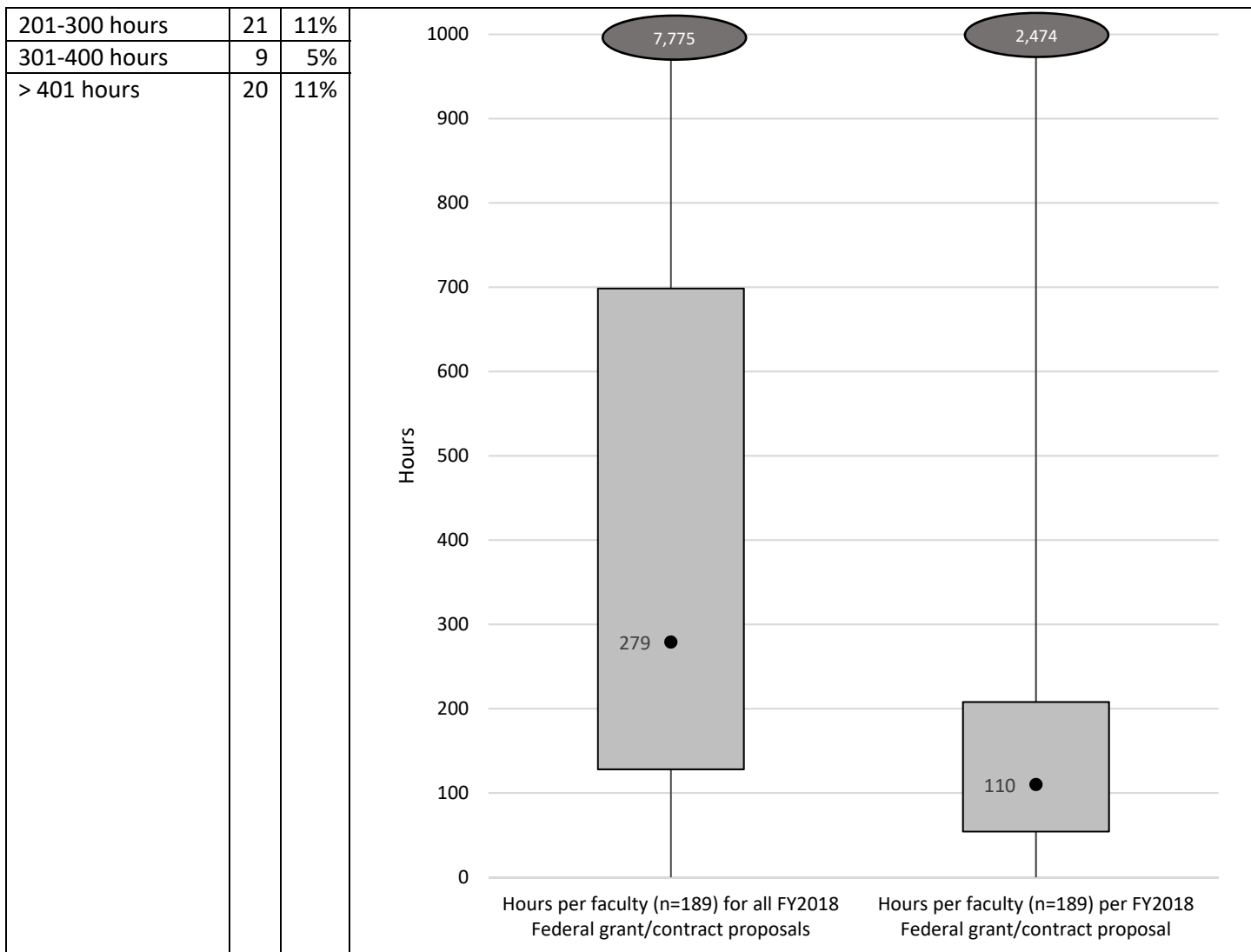
Professor	26	168	190	8.00	49.2	106	196	889
By Grant/Contract Proposal Role								
Principal Investigator	140	291	340	12.0	102	195	332	2,474
All Except NIH K/F/T-Types	129	273	332	20.0	101	179	300	2,474
NIH K-Type or F-Type	31	105	118	0.00	16.0	46.0	167	370
NIH T-Type	5	363	223	73.0	241	343	527	633
Multiple Principal Investigator	26	85.6	81.4	0.00	27.5	61.3	113	300
Co-Investigator	118	97.1	169	0.00	18.3	37.5	74.3	889

Total Effort Writing Grants of All SOM Faculty

Table 8 summarizes the distribution of hours spent in proposal preparation by the 189 respondents for all federal proposals in fiscal year 2018 (Table 8a) and per federal proposal (Table 8b). Overall, faculty members spent a median of 279 hours in fiscal year 2018 on preparing proposals to federal sponsors.

The survey data indicated that three-quarters of the faculty spent no more than 699 hours (75th percentile) in fiscal year 2018 on all proposals, with a quarter of the respondents having spent less than 128 hours (25th percentile). When looking at the time spent per faculty member per federal proposal in fiscal year 2018, the survey data indicated a median of 110 hours per proposal. Three-quarters of the faculty spent 208 hours (75th percentile) or less per proposal, and a quarter reported having spent 54.2 (25th percentile) or fewer hours per proposal.

Table 8a. FY2018 Federal Grant/Contract Proposal Writing Effort per SOM Faculty for all proposals (n=189)	n	% of Respondents
0 Hours	1	1%
1-50 hours	21	11%
51-100 hours	20	11%
101-150 hours	15	8%
151-200 hours	19	10%
201-300 hours	25	13%
301-400 hours	15	8%
> 401 hours	73	39%
Table 8b. FY2018 Federal Grant/Contract Proposal Writing Effort per SOM Faculty per proposal (n=189)	n	% of Respondents
0 Hours	1	1%
1-50 hours	44	23%
51-100 hours	45	24%
101-150 hours	25	13%
151-200 hours	24	13%



Department Feedback Regarding Level of Funded Support

The Faculty Senate resolution asks for data to be submitted on departmental support for the prior year by faculty members for writing grants or other unsupported activities. Faculty responses on this topic are summarized above in Tables 4a and 4b. In addition, in April 2018, the SOM surveyed its departments with regard to compensation support provided to faculty in both offer letters and in practice. A report was prepared and provided to then Provost Baldasty in May 2018. Key results are summarized below:

(The) majority of departments strive to cover 5% of compensation; clinically active faculty may have higher percentages of compensation support for scholarly time, up to 20%, but it would be reduced if extramural funding was awarded. Some departments only provide grant writing compensation for faculty when they are writing grants or teaching compensation when they are teaching.

(Funding support) varies by department, some departments provide a set level of compensation funding for all University activities and some provide a set level of compensation funding for grant writing or a set level of compensation funding for teaching, with some compensation funding for all other University activities. In general, level of compensation funding is based on the faculty member's activity profile.

Generally, alignment is monitored in a variety of ways, quarterly, semi-annual, or annual meetings with faculty or periodic reviews by departmental administrative leadership. In addition, whenever a faculty member's activity profile changes or extramural funding is reduced, the department reviews the alignment of compensation funding. Faculty Effort Certification Review and the 100% research funded report are used by department administration as another checkpoint for research active faculty.

DISCUSSION

Caveats with Regard to Survey Results

- The survey was a self-assessment survey based on recall. It was given in March 2019, and asked faculty to provide estimates of time spent on grants prepared from July 2017 to June 2018; i.e., a lookback period of between 9 and 21 months.
- Not all non-federal salary support can be used as a source of support for federal grant writing and the sources of non-federal salary support were not identified. For faculty without tenure, a large proportion of non-federal salary support is likely to represent clinical effort, teaching/service effort, foundation grants, and/or industry contracts, none of which can be used as source of support for federal grant writing.
- The adjusted response rate to the survey overall (those who fully completed the survey instrument) was 29%, and did not vary substantially among the various faculty groups surveyed.
- The questions were structured to be as clear as possible, but there were some answers (such as those from tenured faculty that indicated they had no non-federal salary support) which suggests some misunderstanding of the questions.
- One major feature of the responses was the very high degree of variability, which diminishes the certainty with which generalizations can be made. Nevertheless, there are a set of observations that can be made.

Observations

1. The most common grants sought were in support of research (non-K, -F, or-T applications). Solo PI and co-investigator roles were most common; multiple grants were much less so. Multiple-PI grant applications were more common among tenure-track faculty.
2. The median time for preparation of a single grant application varied by role and application type but was 110 hours overall. It varied from Principal Investigator roles where the median effort was 195 hours per proposal, compared to the median of 37.5 hours when the faculty member was a co-investigator.
3. The median number of grants written by a research-active faculty member in the year that the survey addressed was 2 as PI, and 1 as co-PI. However, there was also wide variation among respondents and one quarter reported that they submitted 5 or more federal proposals as a Principal Investigator and 7 or more grants as either Principal Investigator or Co-Investigator.
4. The "average" faculty member therefore spent about 428 hours writing grant applications per year. However, faculty in the highest quartile spent at least 975 hours writing grant applications in 2018 (corresponding to 5 grants as Principal Investigator).
5. The included in the time spent writing grant applications is the time spent developing the concept. This question varied more than 20-fold, from 100 hours to 2474 hours. The highest response is more than forty nine 50-hour weeks, or full-time. This response is understandable in that considering the 3 next step to take in a

research program does require considerable time, but might not all require compensation from a non-federal source to comply with federal rules.

6. The median number of hours worked per week was about 55 overall and was fairly constant across groups given the variability. Assuming 48 weeks worked per year, the median number of hours worked per year was approximately 2600.
7. The average faculty member therefore spent about 16% of their time writing grant applications. Faculty in the highest quartile of reported effort spent at least 39% of their time writing grant applications.
8. The median amount of non-federal support reported by faculty was 32%, ranging from a low of 15% for research faculty to a high of 40% for tenure track faculty.
9. Non-federal salary support for grant writing seems adequate for the average faculty member submitting 2 PI grants and 1 Co-P grant per year, assuming funds are unrestricted. However, a quarter of faculty submit a higher number of grants, with the time devoted to grant writing estimated to exceed the median amount of non-federal support. In addition, 37% of research professors (all ranks) report receiving 9% or less non-federal salary support. These results suggest gaps in salary support for a significant fraction of SOM faculty, especially those who submit more than 7 grants per year.

Next steps

It is hard to draw conclusions about the relationship between time spent on grant preparation and the amount of non-federal support given the wide variability in time spent across grant type, time spent within grant type, number and type of grants submitted, and amount of non-federal support reported.

When looking at median data faculty appear to receive enough non-federal salary support to provide for grant writing activity, assuming that the non-federal funds are unrestricted. However, faculty in research appointments might not receive sufficient non-federal salary support to cover their grant writing activity and, for non-tenure faculty, non-federal funds are often restricted (e.g. clinical, teaching, foundation grants). In addition, a quarter of faculty submit substantially more grants than the median, likely exceeding non-federal salary support. Stratified analyses comparing tenured versus non-tenured faculty and/or the top quarter of grant submitters versus the bottom could help further clarify results and inform future plans or policy changes.

Department chairs will receive this report and will be reminded to make sure that salary from non-federal sources is enough to support the grant writing activity of their faculty.

APPENDIX

Data Collection Instrument/Survey Questionnaire

In the past year, what percentage of your base salary was provided by non-federal sources?
% of base salary

What do you consider to be your average work week?
of hours

-- Next Screen --

Our records indicate that you were listed as the "Principal Investigator" for the following project(s):

- Project 1 (eGC1 #)
- Project 2 (eGC1 #)
- :
- Project n (eGC1 #)

How many people, in addition to you, spent time working on the preparation for a typical single grant/contract proposal representative of the one(s) listed above?
of people

PLEASE ESTIMATE THE TOTAL NUMBER OF HOURS THAT YOU SPENT COMPLETING THE FOLLOWING SECTIONS, WHEN APPLICABLE, FOR A TYPICAL SINGLE GRANT/CONTRACT PROPOSAL REPRESENTATIVE OF THE ONE(S) LISTED ABOVE:

Developing the concept/content for the grant/contract:
of hours

Organizing Investigators/Staff to be involved:
of hours

Budget Development:
of hours

Budget Justification:
of hours

Biosketches:
(including your own)
of hours

Other Administration Documents:
(including human subjects, facilities/resources, planned enrollment, other required information)
of hours

Letters of Support:
of hours

Literature Review:
of hours

Research Plan:
of hours

Appendix:
of hours

As a grant/contract Principal Investigator, are there any other parts you spend time on for a typical single grant/contract proposal representative of the one(s) listed above?
 Yes
 No

→ If Yes
Describe the additional task:
Specify the time on this task
of hours

What additional comments you would like to share regarding the preparation process for a typical single grant/contract proposal representative of those listed above?

-- Next Screen if any NIH K-mechanism or F-mechanism projects as PI --

Our records indicate that you were listed as the "Principal Investigator" for the following fellowship/career development project(s):

- Project 1 (eGC1 #)
- Project 2 (eGC1 #)
- :
- Project n (eGC1 #)

How many people, in addition to you, spent time working on the preparation for a typical single grant/contract proposal representative of the one(s) listed above?

of people

PLEASE ESTIMATE THE TOTAL NUMBER OF HOURS THAT YOU SPENT COMPLETING THE FOLLOWING SECTIONS, WHEN APPLICABLE, FOR A TYPICAL SINGLE GRANT/CONTRACT PROPOSAL REPRESENTATIVE OF THE ONE(S) LISTED ABOVE:

Developing the concept/content for the grant/contract:

of hours

Organizing Investigators/Staff to be involved:

of hours

Budget Development:

of hours

Budget Justification:

of hours

Biosketches:

(including your own)

of hours

Other Administration Documents:

(including human subjects, facilities/resources, planned enrollment, other required information)

of hours

Letters of Support:

of hours

Literature Review:

of hours

Research Plan:

of hours

Appendix:

of hours

As a grant/contract Principal Investigator, are there any other parts you spend time on for a typical single grant/contract proposal representative of the one(s) listed above?

- Yes
 No

→ If Yes

Describe the additional task:

Specify the time on this task

of hours

What additional comments you would like to share regarding the preparation process for a typical single grant/contract proposal representative of those listed above?

-- Next Screen if any NIH T-mechanism projects as PI --

Our records indicate that you were listed as the "Principal Investigator" for the following training grant project(s):

- Project 1 (eGC1 #)
- Project 2 (eGC1 #)
- :
- Project n (eGC1 #)

How many people, in addition to you, spent time working on the preparation for a typical single grant/contract proposal representative of the one(s) listed above?

of people

PLEASE ESTIMATE THE TOTAL NUMBER OF HOURS THAT YOU SPENT COMPLETING THE FOLLOWING SECTIONS, WHEN APPLICABLE, FOR A TYPICAL SINGLE GRANT/CONTRACT PROPOSAL REPRESENTATIVE OF THE ONE(S) LISTED ABOVE:

Developing the concept/content for the grant/contract:

of hours

Organizing Investigators/Staff to be involved:

of hours

Budget Development:

of hours

Budget Justification:

of hours

Biosketches:

(including your own)

of hours

Other Administration Documents:

(including human subjects, facilities/resources, planned enrollment, other required information)

of hours

Letters of Support:

of hours

Literature Review:

of hours

Research Plan:

of hours

Appendix:

of hours

As a grant/contract Principal Investigator, are there any other parts you spend time on for a typical single grant/contract proposal representative of the one(s) listed above?

- Yes
 No

→ If Yes

Describe the additional task:

Specify the time on this task

of hours

What additional comments you would like to share regarding the preparation process for a typical single grant/contract proposal representative of those listed above?

-- Next Screen if any projects as Multiple PI --

Our records indicate that you were listed as the "Multiple PI" for the following project(s):

- Project 1 (eGC1 #)
- Project 2 (eGC1 #)
- :
- Project n (eGC1 #)

PLEASE ESTIMATE THE TOTAL NUMBER OF HOURS THAT YOU SPENT COMPLETING THE FOLLOWING SECTIONS, WHEN APPLICABLE, FOR A TYPICAL SINGLE GRANT/CONTRACT PROPOSAL REPRESENTATIVE OF THE ONE(S) LISTED ABOVE:

Developing the concept/content for the grant/contract:

of hours

Organizing Investigators/Staff to be involved:

of hours

Budget Development:

of hours

Budget Justification:

of hours

Biosketches:

(including your own)

of hours

Other Administration Documents:

(including human subjects, facilities/resources, planned enrollment, other required information)

of hours

Letters of Support:

of hours

Literature Review:

of hours

Research Plan:

of hours

Appendix:

of hours

As a grant/contract Multiple PI, are there any other parts you spend time on for a typical single grant/contract proposal representative of the one(s) listed above?

- Yes
 No

→ If Yes

Describe the additional task:

Specify the time on this task

of hours

What additional comments you would like to share regarding the preparation process for a typical single grant/contract proposal representative of those listed above?

-- Next Screen if any projects as Multiple PI --

Our records indicate that you were listed as the "Co-Investigator" for the following project(s):

- Project 1 (eGC1 #)
- Project 2 (eGC1 #)
- :
- Project n (eGC1 #)

PLEASE ESTIMATE THE TOTAL NUMBER OF HOURS THAT YOU SPENT COMPLETING THE FOLLOWING SECTIONS, WHEN APPLICABLE, FOR A TYPICAL SINGLE GRANT/CONTRACT PROPOSAL REPRESENTATIVE OF THE ONE(S) LISTED ABOVE:

Developing the concept/content for the grant/contract:

of hours

Organizing Investigators/Staff to be involved:

of hours

Budget Development:

of hours

Budget Justification:

of hours

Biosketches:

(including your own)

of hours

Other Administration Documents:

(including human subjects, facilities/resources, planned enrollment, other required information)

of hours

Letters of Support:

of hours

Literature Review:

of hours

Research Plan:

of hours

Appendix:

of hours

As a grant/contract Co-Investigator, are there any other parts you spend time on for a typical single grant/contract proposal representative of the one(s) listed above?

- Yes
 No

→ If Yes

Describe the additional task:

Specify the time on this task

of hours

What additional comments you would like to share regarding the preparation process for a typical single grant/contract proposal representative of those listed above?

-- Next Screen --

Thank you so much for your valuable input to this project.

Initial Survey Invitation Email on March 8, 2019

Subject: School of Medicine Grant Writing Effort Survey

Dear Colleague,

We are working with the UW Faculty Senate on a project to assess the extent of faculty effort expended to generate major funding proposals. As part of that project, we have worked with the School of Medicine Faculty Council on Research and Graduate Education to prepare the followings survey. The overall objective of this survey is to better understand the amount of time that Principal Investigators (PI), Co-Investigators, and others spend on writing grants. We have identified your major (>\$100,000) new and competing grant/contract proposals submitted through UW OSP during fiscal year 2018 (July 1, 2017 through June 30, 2018) in which you have been involved as PI, Multiple or Co-PI, or Co-Investigator.

Please follow this link to a REDCap survey which will appear in parts: SOM Grant-Writing Effort Survey ([URL])

The first part includes two general questions and the subsequent X part(s) refer to the eligible grant/contract(s) we have identified where you are listed as Principal Investigator, Multiple PI, and/or Co-Investigator.

All responses are confidential and responses will be tallied in categories for sharing with the Council on Research and Graduate Education, School of Medicine administration, the faculty senate and University administration.

We apologize for any questions that are unclear and ask that you answer them to the best of your ability. We know how busy you are and we are extremely appreciative of the time you spend on this.

John Slattery (Vice Dean, Research and Graduate Education, School of Medicine)

Sara Jane Webb (Chair, Faculty Council on Research and Graduate Education, School of Medicine)

Reminder E-mail to non-respondents on March 15, 2019

Subject: REMINDER: School of Medicine Grant-Writing Effort Survey

Sent on behalf of John T. Slattery, Ph.D., Vice Dean for Research and Graduate Education

Dear Colleague,

Last Friday, March 8, you received an e-mail with a link to a survey about your time spent writing grants in fiscal year 2018. The survey is part of a collaboration with the UW Faculty Senate and the School of Medicine Faculty Council on Research and Graduate Education to assess the extent of faculty effort expended to generate major funding proposals.

If you have not yet done so, please follow this link to a REDCap survey: SOM Grant-Writing Effort Survey ([URL])

This link is unique to you and lists the eligible grants/contract(s) we identified where you are listed as the Principal Investigator, Multiple PI, and/or Co-Investigator. Eligible grants/contract(s) were major (>\$100,000) new and competing proposals submitted through UW OSP during fiscal year 2018 (July 1, 2017 through June 30, 2018).

All responses are confidential and responses will be tallied in categories for sharing with the Council on Research and Graduate Education, School of Medicine administration, the faculty senate and University administration.

John Slattery (Vice Dean, Research and Graduate Education, School of Medicine)

Sara Jane Webb (Chair, Faculty Council on Research and Graduate Education, School of Medicine)