

Purdue Engineering – COACHE Results

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Process

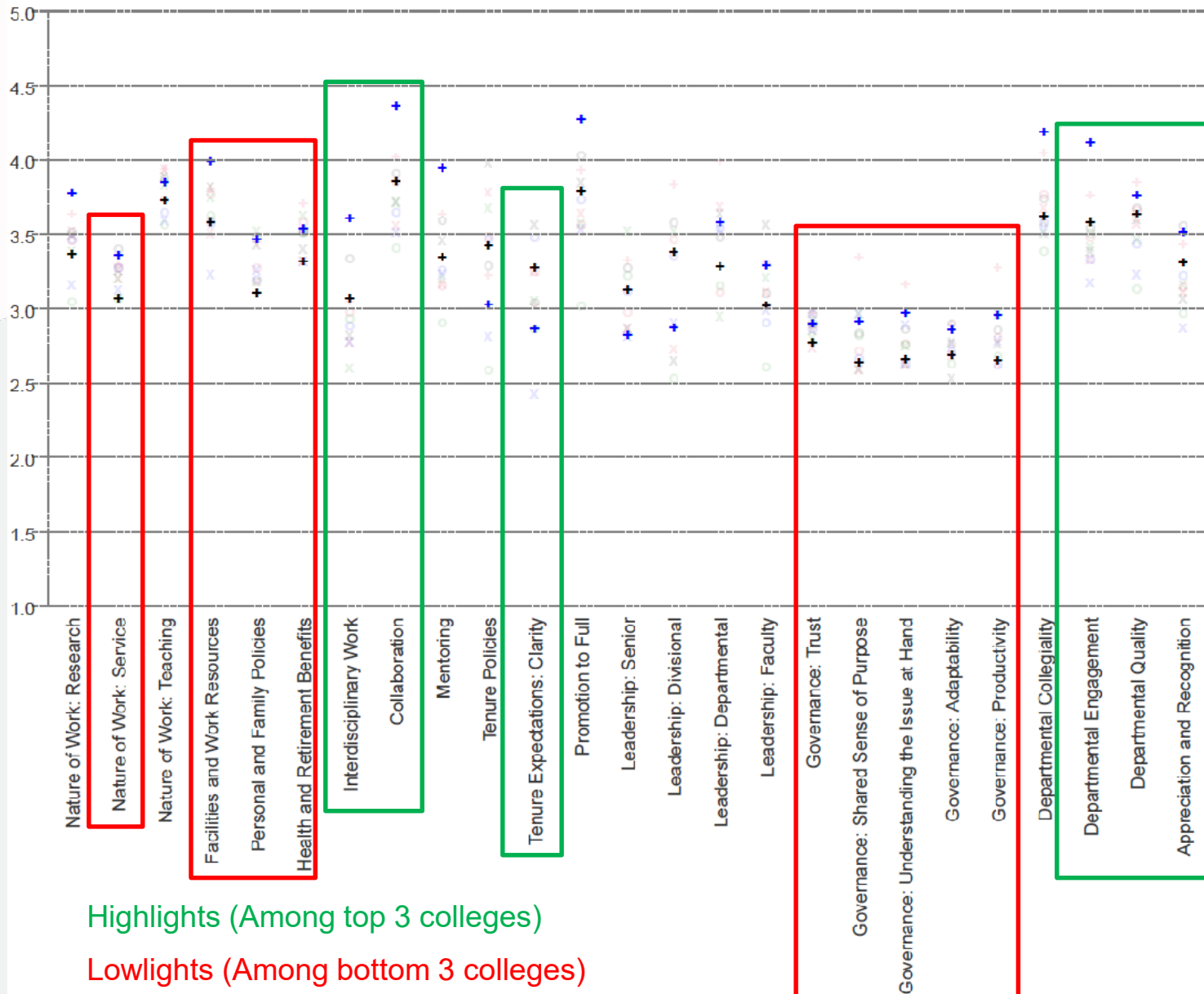
- About the survey
 - Faculty responded to questions on a 1-5 scale, some questions ask for degree of agreement to statement, and some ask for frequency that the question is correct.
 - Data collected under 25 “Benchmarks”, each with 5 to 10 questions. “Items” refer to the individual questions within the benchmark.
 - A higher score means better response.
- Identification of Highlights and Lowlights
 - Levels of detail: College, by Gender, URM, Rank and School.
 - Inspect benchmarks and items for mean ($\bar{x}$) and change relative to 2015 COACHE ($\Delta > 0$ or < 0 i.e. improving or dropping)
 - Where possible, compare against majority sentiments (Gender, URM)
 - Sanity check with survey experts
- Initial brainstorming on potential interventions and focus group discussion topics

Who responded (2018)

- Purdue University: 50.7%
- College of Engineering: 36.8%
within college:
 - URM: 40.7%
 - Woman/Female: 56.3%
 - Man/Male: 32.5%
 - Asst Prof: 41.8%
 - Assoc Prof: 40.0%
 - Full Prof: 34.1%
- Aeronautics & Astronautics: 64.9%
- Chemical Engr: 42.3%
- Civil Engr: 37.0%
- Electrical & Computer Engr: 17.2%
- Engr Education: 69.6%
- Industrial Engr: 40.0%
- Materials Engr: 32.3%
- Mechanical Engr: 37.3%
- (Other schools $n < 10$)

Overall Engr

2018 Engr benchmarks vs other colleges



+ Engr
+ Provost's office
(Honors
College/Lib
raries)

Highlights (Among top 3 colleges)

Lowlights (Among bottom 3 colleges)

Defining Highlights and Lowlights

LOWLIGHTS	HIGHLIGHTS
Benchmarks with mean ($\bar{x}$) < 3.0	Benchmarks with mean ($\bar{x}$) > 3.5
Benchmarks with change $\Delta < 0.2$	Benchmarks with change $\Delta > 0.2$
Items with score < 3.0	Items with score ≥ 4.0

Highlights

Great and Getting Better or Holding: Benchmark $\bar{x} > 3.5$ and $\Delta > 0$

- **Collaboration (3.8):** Opportunities for collaboration within dept [Q105A] (3.8), Opportunities for collaboration outside dept [Q105E] (3.9), Opportunities for collaboration outside inst [Q105D] (3.9)
- **Promotion: (T Assoc Prof) (3.8):** Dept culture encourages promotion of assoc prof [Q135B] (4.1), Reasonable expectations of promotion, from assoc to full prof [Q135C] (4.0), Clarity of promotion process [Q140A] (3.9), Clarity of promotion criteria [Q140B] (3.8), Clarity of promotion standards [Q140C] (3.4), Clarity of body of evidence for promotion [Q140D] (4.0), Clarity of time frame for promotion [Q140E] (3.5), Clarity of whether I will be promoted [Q140F] (3.2)
- **Departmental Quality (3.6):** Intellectual vitality of tenured faculty [Q195A] (3.7), Intellectual vitality of pre-tenure faculty [Q195B] (4.2), Scholarly productivity of tenured faculty [Q195C] (3.6), Scholarly productivity of pre-tenure faculty [Q195D] (4.0), Teaching effectiveness of tenured faculty [Q195G] (3.7), Teaching effectiveness of pre-tenure faculty [Q195H] (3.9), Dept is successful at faculty recruitment [Q240B] (3.7), Dept is successful at faculty retention [Q240C] (3.5)
- **Facilities & Work Resources (3.6):** Support for improving teaching [Q70F] (3.5), Office [Q90A] (3.8), Laboratory, research, studio space [Q90B] (3.4), Equipment [Q90C] (3.5), Classrooms [Q90D] (3.6), Library resources [Q90E] (4.0), Computing & technical support [Q90F] (3.6), Clerical/administrative support [Q90H] (3.3)

Highlights (cont.)

Great but Slipping: Benchmark $\bar{x} > 3.5$ and $\Delta < 0$

- **Nature of Work: Teaching (3.7):** Time spent on teaching [Q45A] (3.8), Number of courses taught [Q70A] (3.8), Level of courses taught [Q70B] (4.1), Discretion over course content [Q70C] (4.1), Number of students in classes taught [Q70D] (3.6), Quality of students taught [Q70E] (3.6), Quality of grad students to support teaching [Q70I] (3.6), Equitability of distribution of teaching load [Q70H] (3.1)
- **Departmental Collegiality (3.6):** Colleagues support work/life balance [Q200C] (3.6), Meeting times compatible with personal needs [Q200D] (4.0), Amount of personal interaction w/pre-tenure [Q205B] (3.5), How well you fit [Q205C] (3.5), Amount of personal interaction w/tenured [Q205E] (3.4), Colleagues pitch in when needed [Q210A] (3.5), Dept is collegial [Q210C] (3.8), Dept colleagues committed to diversity/inclusion [Q212A] (3.8)
- **Departmental Engagement (3.6):** Discussions of undergrad student learning [Q190A] (3.7), Discussions of grad student learning [Q190B] (3.6), Discussions of effective teaching practices [Q190C] (3.4), Discussions of effective use of technology [Q190D] (3.3), Discussions of current research methods [Q190E] (3.4), Amount of professional interaction w/pre-tenure [Q205A] (3.8), Amount of professional interaction w/tenured [Q205D] (3.7)

Good with Large Improvement: Benchmark $\bar{x} > 3.0$ and $\Delta > 0.2$

- **Health & Retirement Benefits (3.3):** Health benefits for yourself [Q95A] (3.2), Health benefits for family [Q95B] (3.2), Retirement benefits [Q95C] (3.5), Phased retirement options [Q95I] (3.2)

Very High Item within Mediocre Benchmarks, Items with $\bar{x} \geq 4.0$

- **Nature of Work: Research (3.3):** Influence over focus of research [Q80B] (4.4)
- **Appreciation & Recognition (3.3):** College is valued by Pres/Provost [Q220A] (4.2)

Lowlights

Bad and Slipping Benchmark $\bar{x} \leq 3.0$ and $\Delta < 0$

- **Governance: Adaptability (2.7):** Governance in unusual situations [Q188D] (2.6), Systematic review of governance process [Q188E] (2.4), Institution cultivates new leaders among faculty [Q189A_C] (3.0)
- **Governance: Productivity (2.6):** Effectiveness of the shared governance system [Q187B] (2.5), Committees make progress toward goals [Q189A_A] (3.0), Progress is publicly recognized [Q189A_B] (2.6)
- **Governance: Purpose (2.6):** Institutional decisions not made until consensus among faculty & senior admin [Q189A_D] (2.2), Senior admins ensure time for faculty input [Q189A_E] (2.6), Respectfully consider one another's views before making important decisions [Q189B_C] (2.7)
- **Governance: Trust (2.8):** Understandable processes for expressing opinions [Q188B] (2.7), Clear rules about roles/authority [Q188C] (2.7), Follow rules of engagement [Q189B_D] (2.9), Have an open system of communication for making decisions [Q189B_E] (2.7), Discuss difficult issues in good faith [Q189B_G] (2.8)
- **Governance: Understanding (2.6):** Faculty governance structures allow input [Q188A] (2.8), Senior admins communicate rationale of decisions [Q189A_F] (2.7), Have equal say in governance matters [Q189B_A] (2.3), Engage each other in defining decision criteria used to evaluate options [Q189B_B] (2.6)
- **Leadership: Faculty (3.0):** Faculty Ldrshp: Pace of decision making [Q186A] (2.9), Faculty Ldrshp: Stated priorities [Q186B] (3.0), Faculty Ldrshp: Communication of priorities [Q186C] (3.0)

Lowlights (cont.)

Bad and Improving: Benchmark $\bar{x} \leq 3.0$ and $\Delta > 0$ NONE

Good but Slipping Benchmarks: Benchmark $\bar{x} > 3.0$ and $\Delta < 0.2$

- **Tenure Expectations: Clarity (TT Asst Prof) (3.2)** dropped 0.5: Clarity of expectations: Scholar [Q137A] (3.8), Clarity of expectations: Teacher [Q137B] (3.9), Clarity of expectations: Advisor [Q137C] (3.6), Clarity of expectations: Colleague [Q137D] (2.8), Clarity of expectations: Campus citizen [Q137E] (2.5), Clarity of expectations: Broader community [Q137F] (2.8)
- **Tenure Policies (TT Asst Prof) (3.4)**, dropped 0.5.: Clarity of tenure process [Q136A] (3.6), Clarity of tenure criteria [Q136B] (3.5), Clarity of tenure standards [Q136C] (3), Clarity of body of evidence for deciding tenure [Q136D] (3.6), Clarity of whether I will achieve tenure [Q136E] (3.4), Consistency of messages about tenure [Q139A] (3.1), Tenure decisions are performance-based [Q139B] (3.7)

Bad Items in Good Benchmarks: Benchmark $\bar{x} \geq 3.0$ and Item $\bar{x} < 3.0$

- **Departmental Quality (3.6):** Outside offers are not necessary in negotiations [Q240A] (2.3), Dept addresses sub-standard performance [Q240D] (2.4)
- **Mentoring (3.3):** Support for faculty to be good mentors [Q130C] (2.6)
- **Nature of Work: Research (3.3):** Availability of course release for research [Q85E] (2.7)
- **Personal & Family Policies (3.0):** Housing benefits [Q95D] (2.7), Childcare [Q95G] (2.8), Eldercare [Q95H] (2.8)
- **Nature of Work: Service (3.1):** Support for faculty in leadership roles [Q55B] (2.7), Equitability of committee assignments [Q60D] (2.8)
- **Leadership: Senior (3.1):** President: Communication of priorities [Q180C] (2.8)
- **Interdisciplinary Work (3.1):** Budgets encourage Interdisciplinary work [Q100A] (2.9)

Women

Relative differences

Items Where Women Faculty Scores were Higher than Men Faculty Scores with Effect Size ≥ 0.5

COACHE Variable	Effect Size	Women Mean	Men Mean
Effectiveness of mentoring from outside dept [Q125B]	0.72	4.16	3.5

Items Where Women Faculty Scores were Lower than Men Faculty Scores with Effect Size ≥ 0.5

COACHE Variable	Effect Size	Women Mean	Men Mean
Support for faculty in leadership roles [Q55B]	0.77	2.00	2.9
Availability of course release for research [Q85E]	0.60	2.20	2.9

Low Scored Items (< = 2.5) by Women Faculty

COACHE Benchmark	COACHE Variable	Scale	Women Mean
Departmental Quality	<i>Outside offers are not necessary in negotiations [Q240A]</i>	Agreement	2.0
	<i>Dept addresses sub-standard performance [Q240D]</i>	Agreement	2.1
Governance: Adaptability	<i>Systematic review of governance process [Q188E]</i>	Agreement	2.1
	Governance in unusual situations [Q188D]	Agreement	2.3
Governance: Purpose	<i>Institutional decisions not made until consensus among faculty & senior admin [Q189A_D]</i>	Frequency	1.9
	Senior admins ensure time for faculty input [Q189A_E]	Frequency	2.5
	Respectfully consider one another's views before making important decisions [Q189B_C]	Frequency	2.5
Governance: Trust	Understandable processes for expressing opinions [Q188B]	Agreement	2.5
Governance: Understanding	<i>Have equal say in governance matters [Q189B_A]</i>	Frequency	2.1
	<i>Engage each other in defining decision criteria used to evaluate options [Q189B_B]</i>	Frequency	2.3
	<i>Senior admins communicate rationale of decisions [Q189A_F]</i>	Frequency	2.5
Mentoring	<i>Support for faculty to be good mentors [Q130C]</i>	Agreement	2.2

Note: *italicized* items indicate a sizable difference with majority faculty sentiments.

URM

Relative differences

- No Benchmark Differences with Effect Size ≥ 0.3 (highest was 0.21)
- Item level analysis. Of 155 items, only 53 had 10 or more responses and could be compared against majority sentiments.
- Item Level Differences:

Items rated higher by **URM** Faculty

COACHE Variable	Effect Size	URM Mean	Majority Mean
Number of committees [Q60A]	0.71	3.9	3.2
Equitability of distribution of teaching load [Q70H]	0.60	3.7	3.1
Time spent on research [Q45B]	0.57	4.2	3.5
Number of courses taught [Q70A]	0.51	4.3	3.8
Time spent on service [Q45C]	0.49	3.6	3.2
Clerical/administrative support [Q90H]	0.33	3.6	3.3
Number of students in classes taught [Q70D]	0.32	3.9	3.6
Influence over focus of research [Q80B]	0.30	4.5	4.3

Items rated lower by **URM** faculty

COACHE Variable	Effect Size	URM Mean	Majority Mean
Budgets encourage Interdisciplinary work [Q100A]	0.69	2.3	3.0
Effectiveness of mentoring pre-tenure in dept [Q130A]	0.60	2.7	3.4
Head: Fairness in evaluating work [Q185L]	0.48	2.8	3.5
CAO: Stated priorities [Q180M]	0.42	3.0	3.3
Dean: Ensuring faculty input [Q185G]	0.41	2.8	3.4
Head: Stated priorities [Q185I]	0.40	2.8	3.3
Dean: Stated priorities [Q185E]	0.36	2.9	3.3
Opportunities for collaboration outside inst [Q105D]	0.35	3.5	3.9
Retirement benefits [Q95C]	0.31	3.2	3.6

All Low Scored Items (<3.0) by URM Faculty

COACHE Benchmark	COACHE Variable	Scale	Mean
Interdisciplinary Work	<i>Budgets encourage Interdisciplinary work [Q100A]</i>	Agreement	2.3
	Facilities conducive to Interdisciplinary work [Q100B]	Agreement	2.9
Mentoring	<i>Effectiveness of mentoring pre-tenure in dept [Q130A]</i>	Agreement	2.7
Nature of Work: Research	Support for research [Q80D]	Satisfaction	2.7
	Availability of course release for research [Q85E]	Satisfaction	2.7
	Support for travel to present/conduct research [Q85D]	Satisfaction	2.8
Leadership: Departmental	<i>Head: Stated priorities [Q185I]</i>	Satisfaction	2.8
	<i>Head: Fairness in evaluating work [Q185L]</i>	Satisfaction	2.8
	Head: Pace of decision making [Q185H]	Satisfaction	2.8
Leadership: Divisional	<i>Dean: Ensuring faculty input [Q185G]</i>	Satisfaction	2.8
	<i>Dean: Stated priorities [Q185E]</i>	Satisfaction	2.9
Nature of Work: Service	Equitability of committee assignments [Q60D]	Satisfaction	2.9

Note: *italicized* items indicate a sizable difference with majority faculty sentiments, **bold** indicates item was not identified as a college-level issue.

Schools

Common lowlights from Schools

1. **All Governance related benchmarks – adaptability, purpose, understanding, trust, productivity.**
Average scores (1.95-3.0) and 2015-2018 change (-0.2 to -0.5) are significant
2. **Nature of work service-** equitability of committee assignments. Average scores are 2.4 to 2.9 with 2015-2-18 change being negative (-0.1 to -0.2)
3. **Nature of work service-** support for faculty in leadership roles. Average scores are 2.4 to 2.9 with 2015-2-18 change being negative (-0.1 to -0.2)
4. **Mentoring: Effectiveness of mentoring Associate Profs**, scores 2.7-2.9 with negative 2015-2018 trend
5. **Mentoring: Support for faculty to be good mentors** , scores 2.1-2.9 with negative 2015-2018 trend
6. **Spousal hiring program.** Scores 2.3-2.8
7. **Childcare.** Scores low 2.3-2.7
8. **Appreciation and recognition** scores low for outreach, service, and advising (2.5-2.9)
9. **Nature of Work Research - Post award** scores low (2.7-3.06)
10. **Nature of Work Research - Availability of course release for research** scores low (2.9)
11. **Nature of Work Research - Support for engaging undergrads in research** scores low (2.9)

Rank

Lowlights by Rank

1. **Nature of Work Research:** All ranks were unsatisfied (mean 2.3–2.9) with support for course release for research. However, when asked about “number of courses taught”, average score was 3.56 (associate) to 4.01 (full).
2. **Nature of Work Research:** Assistant professors feel least satisfied (mean 2.9) with expectations to find external funding
3. **Nature of Work Teaching:** All ranks were most unhappy (mean 2.7–3.2) with equitability of teaching load distribution.
4. **Nature of Work Service:** All ranks (mean 2.4–3.0) feel that committee assignments are not made equitably. Associate professors are most unsatisfied.
5. **Nature of Work Service:** All ranks (mean 2.3–2.9) feel that there is insufficient support for faculty in leadership roles. Associate professors are most unsatisfied.
6. **Personal and family policies Childcare:** All ranks are unsatisfied (mean 2.3–2.7) with childcare. Full professors add eldercare (mean 2.9).
7. **Personal and family policies Dual Career Assistance:** Assistant professors are satisfied (mean 3.4) with dual career hiring program—associate (mean 2.7) and full (mean 2.9) are not
8. **Interdisciplinary Work:** Full professors are satisfied overall (benchmark mean 3.2) with support for interdisciplinary work, but assistant (benchmark mean 3.0) and associate professors (benchmark mean 2.7) are less satisfied.
9. **Mentoring Support for faculty to be good mentors:** Associate and full professors agree that there is not sufficient support for mentors (mean 2.4–2.6). Insufficient data from assistant professors.
10. **Governance related benchmarks:** The higher the rank, the lower the score on all issues of governance
11. **Tenure Policies and Expectations:** Assistant professors are satisfied with clarity of expectations for being a researcher, teacher, and advisor (mean 3.6–3.9). They are uncertain though about expectations about being a good “colleague”, “member of the broader community” and “campus citizen” (mean 2.6–2.9).

University Action Areas

Purdue: Benchmark Red Zones: Bottom 30%

- Nature of work: Service
 - Health and retirement benefits
 - Tenure policies
 - Tenure expectations: Clarity
 - **Leadership: Departmental**
 - **Departmental collegiality**
 - Departmental engagement
 - Departmental quality
 - Appreciation and recognition
- Faculty Governance
 - Leadership: Faculty
 - Governance: Trust
 - Governance: Shared sense of purpose
 - Governance: Understanding the issue at hand
 - Governance: Adaptability
 - Governance: Productivity

University: possible areas to work on... based on quantitative COACHE responses

- Clarifying expectations: tenure and promotion, scholar, advisor, teacher, colleague, broader community,
- Cultivating and supporting leaders and mentors among faculty
- Maintaining workload equity, especially teaching and service work
- Improving shared governance and communication
- Committing to collegiality and respectfully considering each others' views, especially in decision-making
- Excelling in diversity and inclusion initiatives
- Departments addressing both appreciation/recognition and substandard performance
- Attending to the associate professor experience

Potential Engr Action Areas

Potential Areas for Engr to work on

Clarifying expectations

- How can we better clarify expectations for tenure and promotion? *P10*
- How can we better clarify expectations for being a good campus citizen (colleague, broader community)? *P10, P20*

Fairness

- How can we improve equitability of committee and teaching assignments? *P10, P12, P15, P16, P18*
- How can we improve support and recognition for faculty mentoring and service (leadership)? *P.7, P12, P13, P18, P20*
- How can schools best address sub-standard performance? *P13*

Facilitating Success

- Research: How can we improve availability of course release for developing research programs and through more effective post-awards support? *P10, P12, P16, P18, P20*
- Interdisciplinarity: How can proposal budgets and budget credits better favor interdisciplinary work? *P10, P12, P16, P18, P20*
- Personal and family: In what way can we improve personal and family policies and support (childcare, eldercare, dual career etc) ? *P10, P18, P20*

Areas related to governance benchmarks: to be determined through focus group meetings

**PINNACLE^{OF}
EXCELLENCE
AT
SCALE**

Supplementary Material

COACHE Benchmarks and Questions

	Benchmark	Number of questions
1	Collaboration	3
2	Governance: Adaptability	3
3	Governance: Productivity	3
4	Governance: Purpose	4
5	Governance: Understanding	4
6	Health & Retirement Benefits	4
7	Leadership: Faculty	4
8	Leadership: Divisional	4
9	Governance: Trust	5
10	Leadership: Departmental	5
11	Mentoring	5
12	Interdisciplinary Work	6
13	Nature of Work: Service	6
14	Leadership: Senior	6
15	Tenure Expectations: Clarity (TT Asst Prof)	6
16	Departmental Engagement	7
17	Tenure Policies (TT Asst Prof)	7
18	Facilities & Work Resources	8
19	Personal & Family Policies	8
20	Promotion: (T Assoc Prof)	8
21	Nature of Work: Teaching	8
22	Departmental Collegiality	8
23	Departmental Quality	10
24	Nature of Work: Research	11
25	Appreciation & Recognition	12

- Benchmarks
 - 25 total
- # of Questions
 - Total # of questions: 156 (5-point items)
 - # of questions per benchmark: 3-12
 - Additional items, exit survey, and demographic questions

codebook at:

<https://www.purdue.edu/provost/faculty/facultyInitiatives/coache.html>