

**USF Research Council
Faculty Survey on
Research Resources**

Preliminary Report

Principal Investigators

Greg Teague, FMHI,
Research Council, member/past-chair

Carol Mullen, COE, Research Council, chair

Uday Murthy, COB,
Research Council, past vice-chair

Abstract

- Background
 - Research Council sought information to help improve USF research
- Methods
 - Survey of USF faculty re: research support areas - levels of support and importance
 - Quantitative & qualitative
- Results
 - Support consistently rated in medium to low range
- Results (cont'd)
 - Variations by unit, rank
 - Key problem areas include research assistants, post-award grant admin., project support, bureaucratic infrastructure, intellectual climate
 - Tone generally problem-oriented; positives not explicitly solicited
- Conclusion
 - Faculty engaged; priorities and approaches suggested

USF Faculty Survey on Research Resources – Preliminary Report

- Background
- Purpose and goals
- Content and methods
- Respondents
- Empirically derived scales
- Overall view
- Selected differences
 - Support and perceived gaps
 - Across units, ranks, fields
- Qualitative themes
- Conclusions & next steps



Background

- Survey planning initiated through Research Council in 2005, intended to
 - Assess types and location of support for research
 - Support RC advisory mission & strengthen credibility through expanded input from faculty
- Iterative input and review by RC and Associate Deans for Research
- Posted on Web spring 06; optional short version
- Direct marketing to faculty via college associate deans and RC members

Purpose and Goals

- Ascertain levels of perceived support to faculty across USF for research, scholarship, & creative activity
 - Overall levels
 - Systematic variations
- Assess relative importance to highlight key areas for improvement efforts
- Strengthen critical components of research infrastructure
- Provide additional preliminary vehicle for faculty input in research strategic planning

Content

- Types of resources rated (on support, importance)
 - Financial resources
 - Material resources
 - Human resources
 - Intellectual/scholarly resources
 - Administrative/academic support
 - Grant support
- Open-ended questions in all sections
- Additional information
 - Overall support rating
 - College/department, rank, tenure status, time at USF
 - Self-ratings of scholarly output
 - Types of current scholarship
 - Ratings of incentive types

Analytic Approach

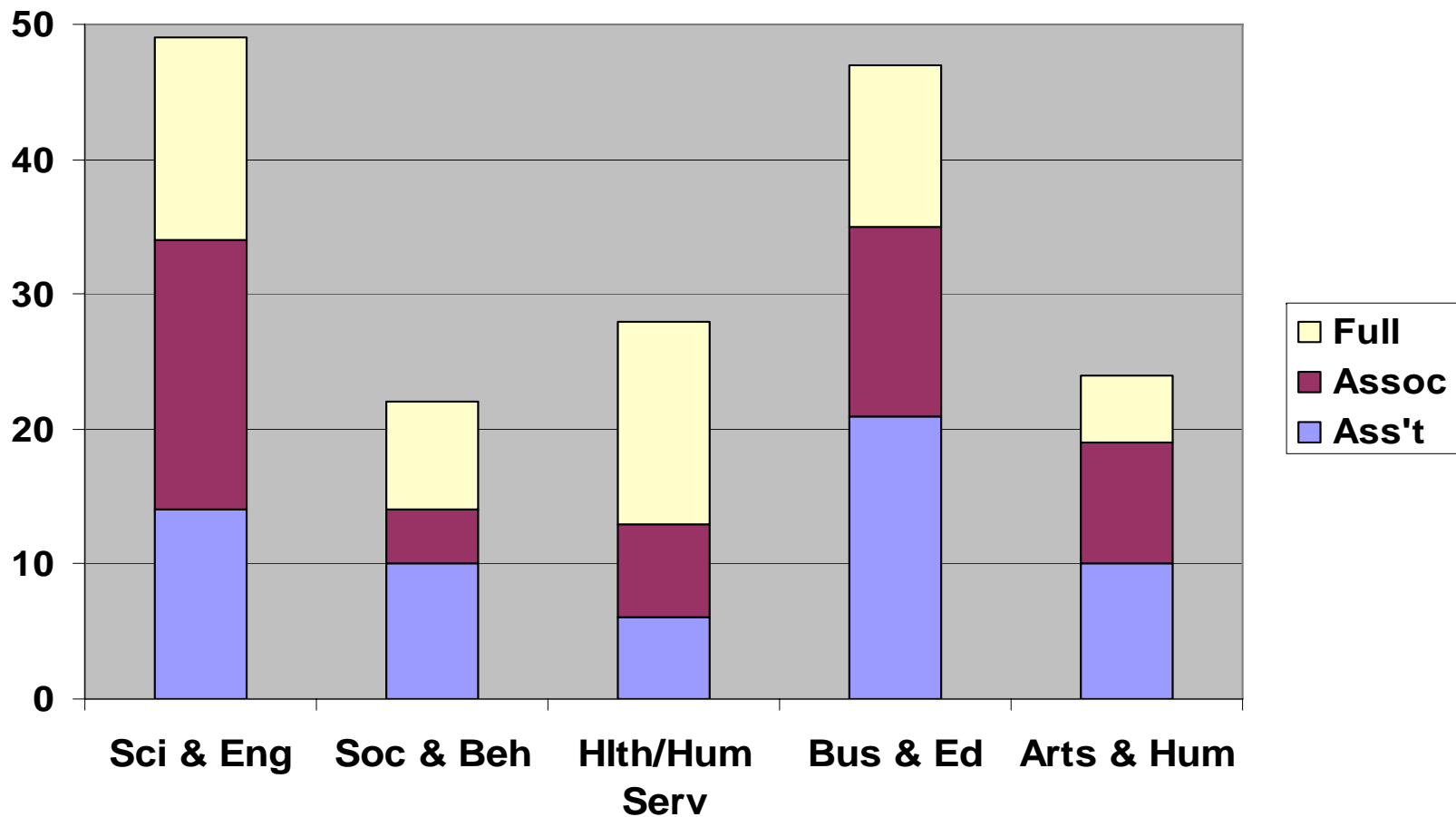
- Data reduction
 - Latent support scales derived via factor analysis & examination of internal consistency
 - Same structure applied to importance items
 - Difference scales (D) derived to identify areas of needed improvement: $D = I - S$
 - Faculty and units grouped by nominal category and by cluster analysis on various dimensions
- Findings based on statistically significant differences
 - Weighted or controlled as appropriate

Respondents

- 305 faculty members
 - All eastern bloc of system: none from St. Pete
 - 245 (80%) chose long form; (75% of these answered more than 75% of rating items)
 - 274 provided at least one open-ended response
- Representation from all colleges
 - Overall, approx. 20%
 - Business Admin, FMHI, & Ed higher; Medicine lower
- Good overall representation by rank, some variation in proportion across colleges
- Good representation from active researchers

Respondents by Field & Rank

(For those who identified department)

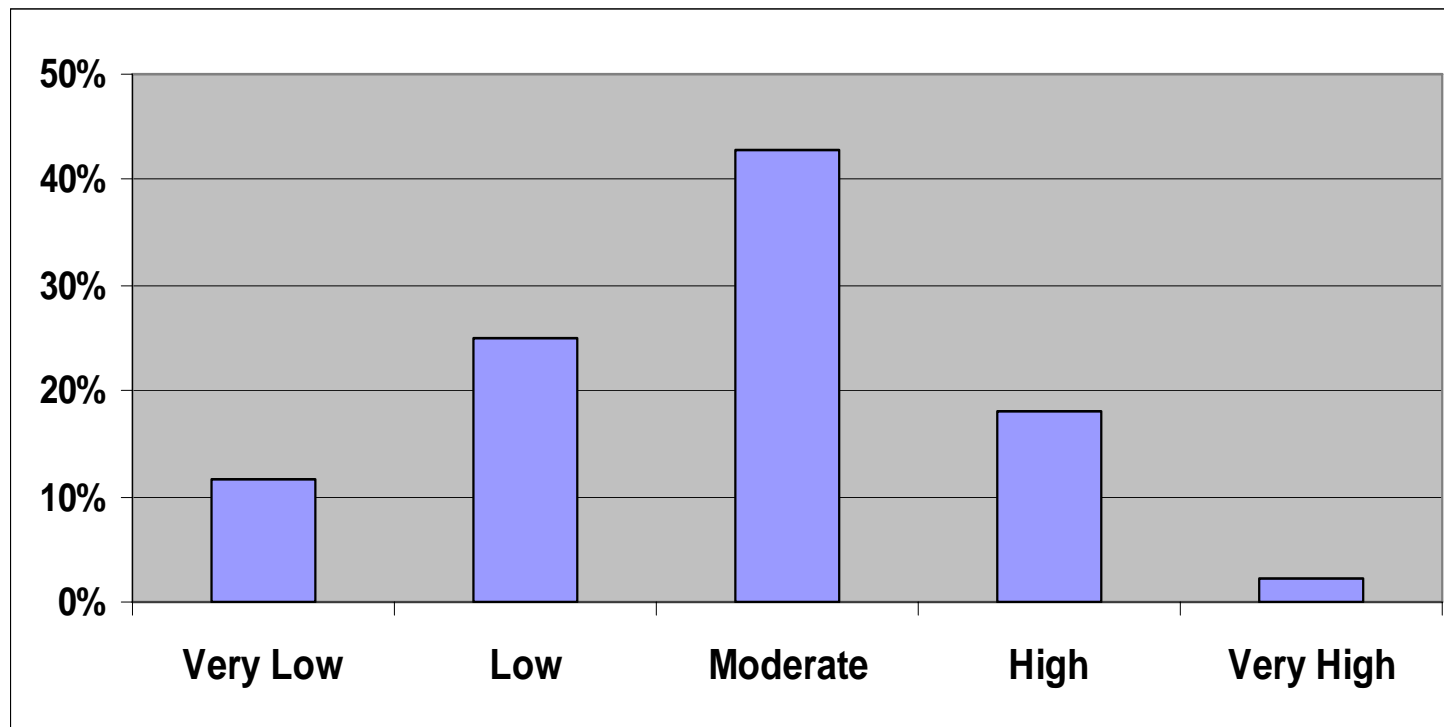




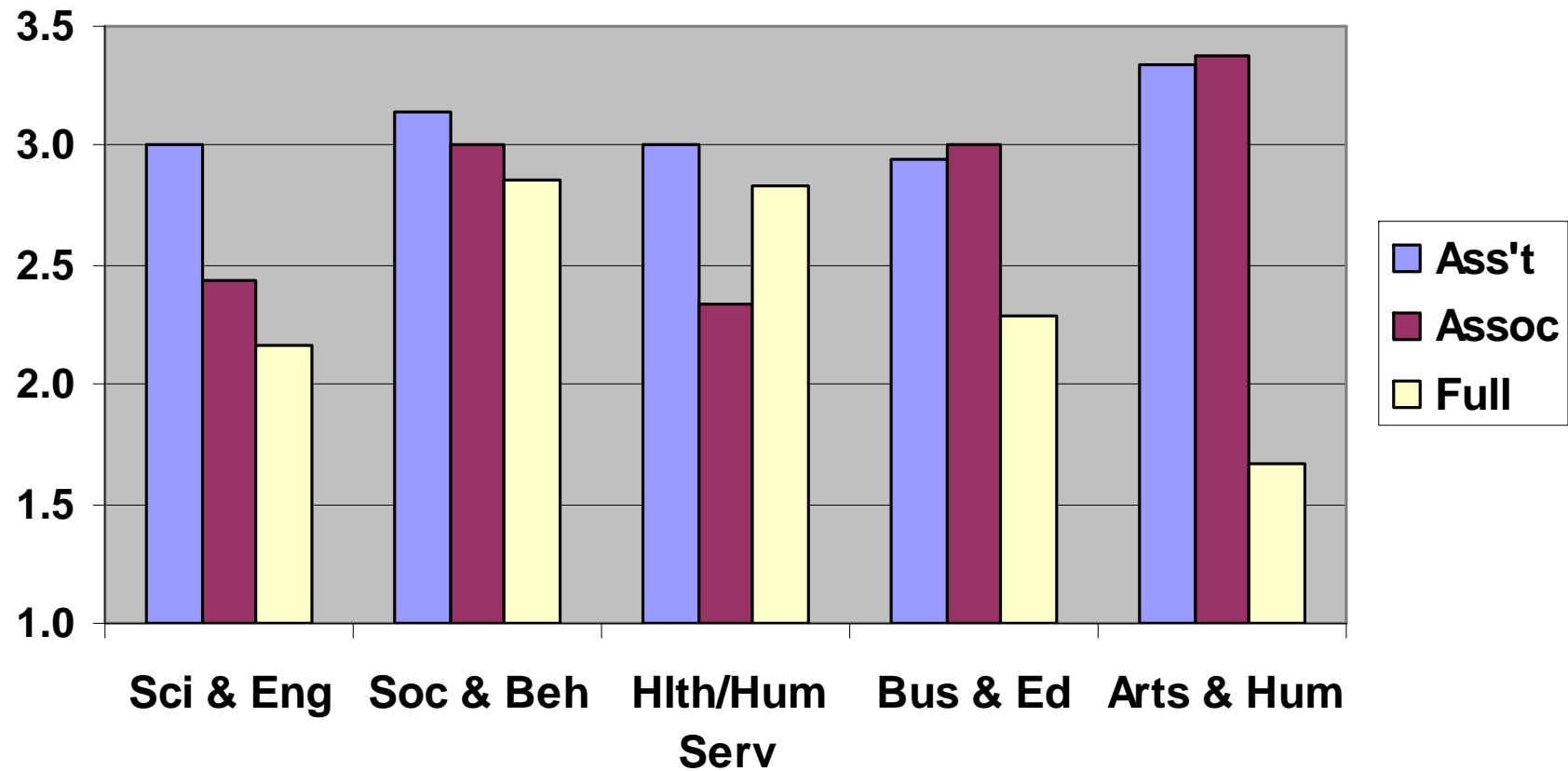
Overall Quantitative Results

Overall Rating of Research Support

- Overall research support rating: moderate to low



Overall Rating of Research Support By Field and Rank



Overall Ratings of Specific Items

- Mean support ratings (S) are in Medium to Low range (1=low, 2=medium, 3=high)

Total mean = 1.67, s.d. = .33

- Mean importance ratings (I) are in Medium to High range (1=low, 2=medium, 3=high)

Mean = 2.47; s.d. = .35

- Mean difference ratings (D=I-S) range from .21 to 1.20

Mean = .81; s.d. = .43

Empirically Derived Support Scales:

1. Scholarship Resources

- Items
 - A2.S Scheduling of teaching and service activities
 - H6.S Librarian who can help with research
 - M7.S Research databases
 - M8.S Scholarly journals/books (at main or other library)
 - S4.S Research-active peers in department/unit
 - S9.S Web-based resources for supporting intellectual/scholarly activities

2. Equipment & Space

- Items
 - H2.S Laboratory assistants
 - M1.S Laboratory space
 - M2.S Non-lab space for conducting research, housing grad asst
 - M3.S Laboratory equipment
 - M4.S Computing equipment
 - M5.S Communications equipment

3. Scholarship Facilitation

- Items
 - A3.S Awareness/recognition/reward for unique/specialized endeavors
 - S1.S Formally assigned research mentor in your unit or college
 - S10.S General intellectual/scholarly climate
 - S2.S Research mentor in your unit or college not formally assigned
 - S3.S Research mentor in your field for help w/ research problems
 - S5.S Research workshop/seminar series in department/unit
 - S7.S Cross-campus & dept. communications, opportunities
 - S6.S Structured support for advancing your research ideas

4. Project Support

- Items
 - F1.S Project start up funds
 - F2.S Bridge funds (between funded projects)
 - F3.S Funds for research related travel
 - F5.S Funds for non-student research personnel
 - H5.S Statistical and/or other expert technical support
 - A1.S Facilitating access to institutions/resources outside USF

5. Grant Preparation & Submission

- Items
 - GPR2.S Assistance with grant-related budget issues
 - GPR3.S Assistance with completing grant application forms
 - GPR4.S Processing submission of grants
 - GPR5.S Web-based resources for supporting pre-award activities

6. Grant Information & Compliance

- Items
 - GPR1.S Assistance with identification of funding opportunities
 - GC1.S Support for compliance with safety and security rules
 - GC2.S Completing grant compliance/reporting forms etc.
 - GC3.S Clarity of research policies, procedures & guidelines
 - GC4.S Channels for info re: research integrity or compliance

7. Post-Award Administration

- Items
 - GPO1.S Review and negotiation of contracts and grants
 - GPO2.S Disbursement of funds
 - GPO3.S Financial management of grant
 - GPO4.S Web-based resources for supporting post-award activities

8. Research Assistants

- Items
 - F4.S Funds for graduate research assistants
 - F6.S Tuition waivers for student research personnel
 - H1.S Research assistants

9. Clerical & Business

- Items
 - H3.S Clerical/staff support (non-grant related)
 - H4.S Clerical/staff support for grant activities (pre, post-award)
 - S8.S Protection and commercialization of intellectual property

Correlations Among Support Scales

Support Scale Correlations	S1	S2	S3	S4	S5	S6	S7	S8
S1 Scholarship Resources								
S2 Equipment & Space	.43							
S3 Scholarship Facilitation	.54	.42						
S4 Project Support	.50	.45	.54					
S5 Grant Prep. & Submission	.24	.18	.28	.32				
S6 Grant Info. & Compliance	.25	.25	.38	.36	.50			
S7 Post-Award Admin.	.37	.40	.38	.35	.52	.44		
S8 Research Assistants	.23	.27	.30	.36	.25	.21	.30	
S9 Clerical & Business	.37	.32	.32	.45	.32	.27	.39	.40

indicates > .4

Support Scale Ratings

<u>Scale</u>	<u>Mean</u>	<u>s.d.</u>	
S1 Scholarship Resources	1.99	.48	
S6 Grant Information & Compliance	1.86	.55	
S5 Grant Preparation & Submission	1.81	.59	↑ Higher
S2 Equipment & Space	1.72	.47	
S9 Clerical & Business	1.67	.59	
S7 Post-Award Administration	1.57	.50	
S3 Scholarship Facilitation	1.55	.44	↓ Lower
S8 Research Assistants	1.49	.53	
S4 Project Support	1.44	.41	
Grand Mean, Support	1.66	.34	

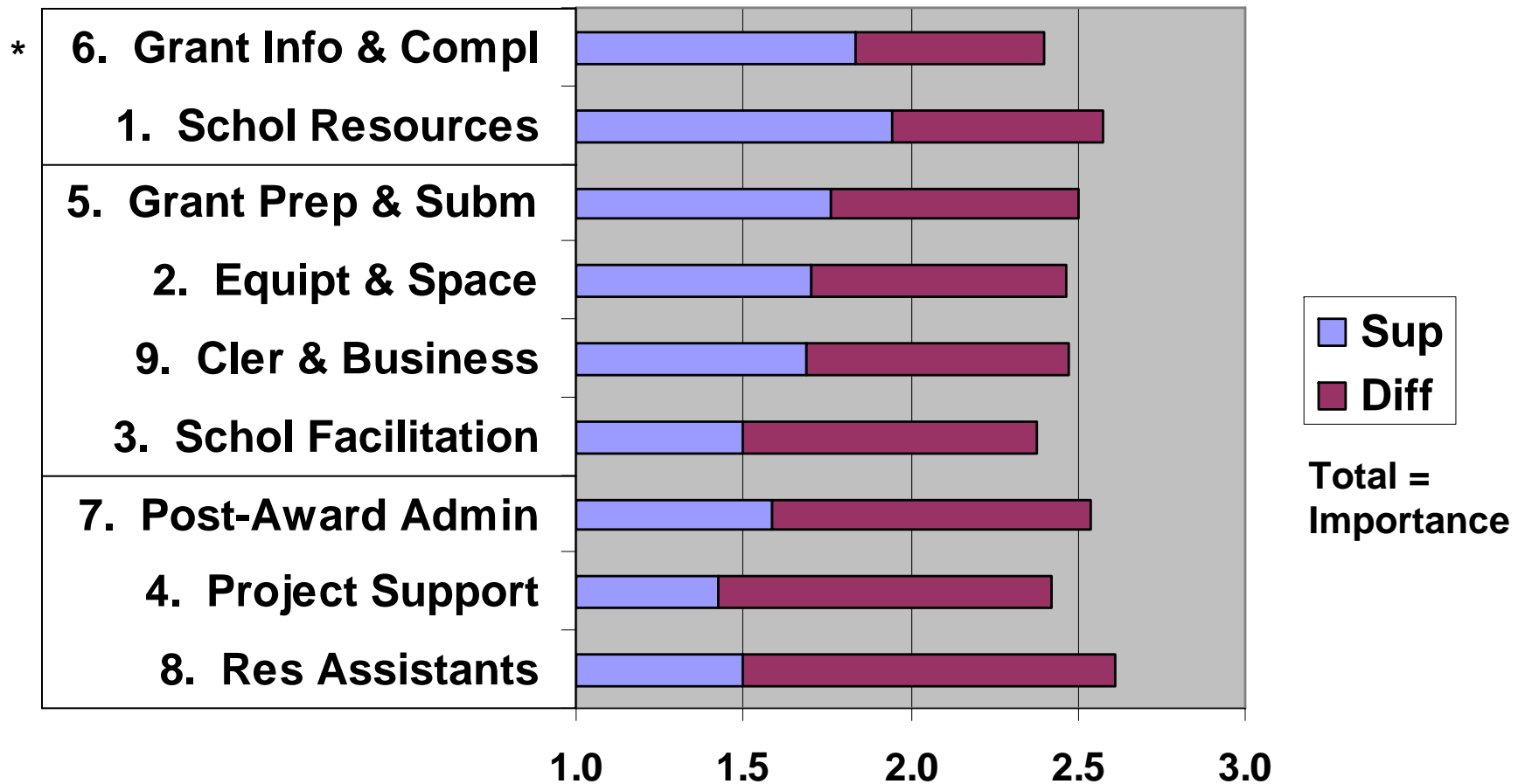
Importance Scale Ratings

<u>Scale</u>	<u>Mean</u>	<u>s.d.</u>	
IM8 Research Assistants	2.58	.51	
IM1 Scholarship Resources	2.58	.41	↑ Greater
IM7 Post-Award Administration	2.57	.50	
IM5 Grant Preparation & Submission	2.53	.54	
IM2 Equipment & Space	2.46	.48	
IM9 Clerical & Business	2.45	.55	↓ Lesser
IM4 Project Support	2.41	.46	
IM6 Grant Information & Compliance	2.41	.52	
IM3 Scholarship Facilitation	2.37	.49	
Grand Mean, Importance	2.47	.37	

Difference Scale Ratings

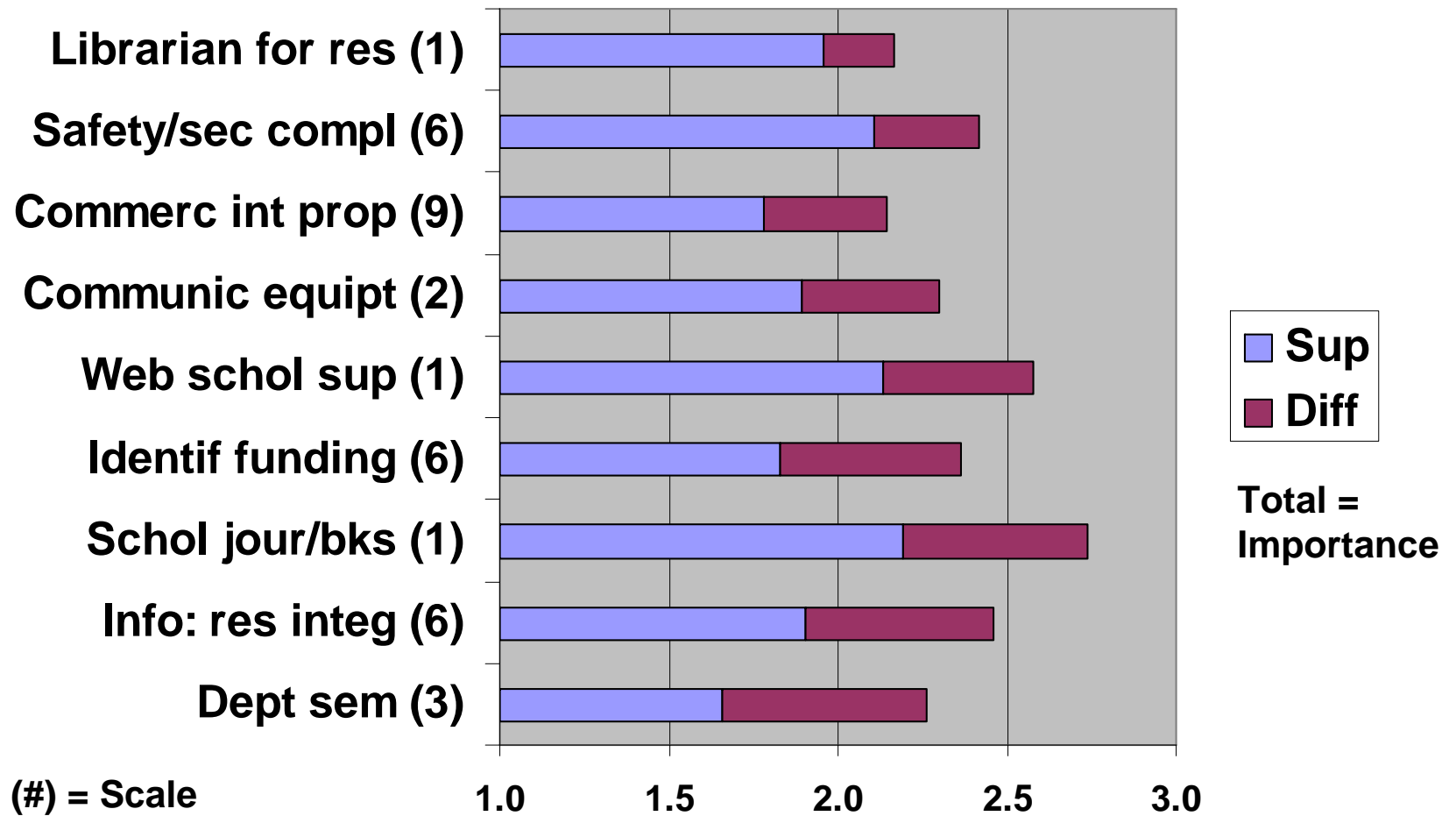
<u>Scale</u>	<u>Mean</u>	<u>s.d.</u>	
D6 Grant Information & Compliance	.55	.66	
D1 Scholarship Resources	.59	.51	
D5 Grant Preparation & Submission	.71	.76	↑ Better
D2 Equipment & Space	.74	.60	
D9 Clerical & Business	.79	.77	
D3 Scholarship Facilitation	.83	.57	
D4 Project Support	.97	.56	↓ Worse
D7 Post-Award Administration	1.01	.70	
D8 Research Assistants	1.08	.69	
Grand Mean, Difference	.81	.43	

Support and Difference Scales (Adjusted for College & Rank)

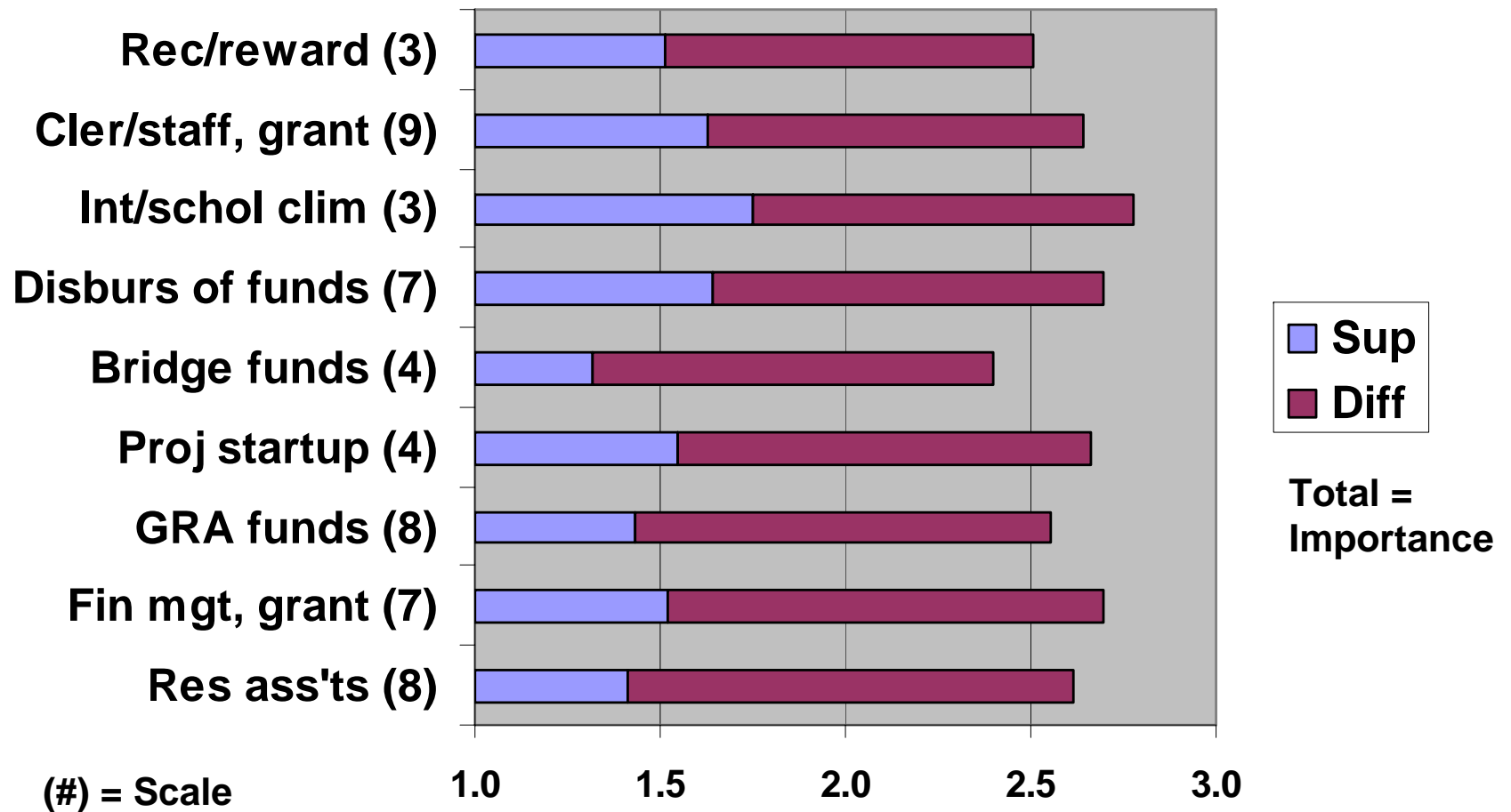


* Boxes separate significantly different groups of Difference scales

Individual Items Where Diff > .60



Individual Items Where Diff 1.00





Variations

Variations in Difference Scales By Rank

	1. Schol Resources	3.Schol Facilitat	4. Project Support	7. Post Award	9. Cler. & Bus
Assist.	L	L		L	H
Assoc.	M	M	L	H	M
Full	H	H		L	L
<i>mean</i>	.59	.83	.97	1.01	.79

L = Lower
 H = Higher

Variations in Difference Scales By Sector controlling for Rank

	1. Schol Resources	3.Schol Facilitat	5. Grant Prep
Health	L	L	L
Research	H	H	H
<i>mean</i>	.59	.83	.71

Variations in Difference Scales By College controlling for Rank

	1. Schol Resources	2. Equip & Space	7. Post Award	9. Clerical & Bus
Arts & Sci			L	
Bus Admin		H	H	H
Education			L	
Engineering			L	
FL Ment Hlth	H	H		
Medicine				
Marine Sci	H			
Nursing	L			L
Public Hlth	L			
Vis Perf Arts			H	
<i>mean</i>	.59	.74	1.01	.79

Variations in Difference Scales

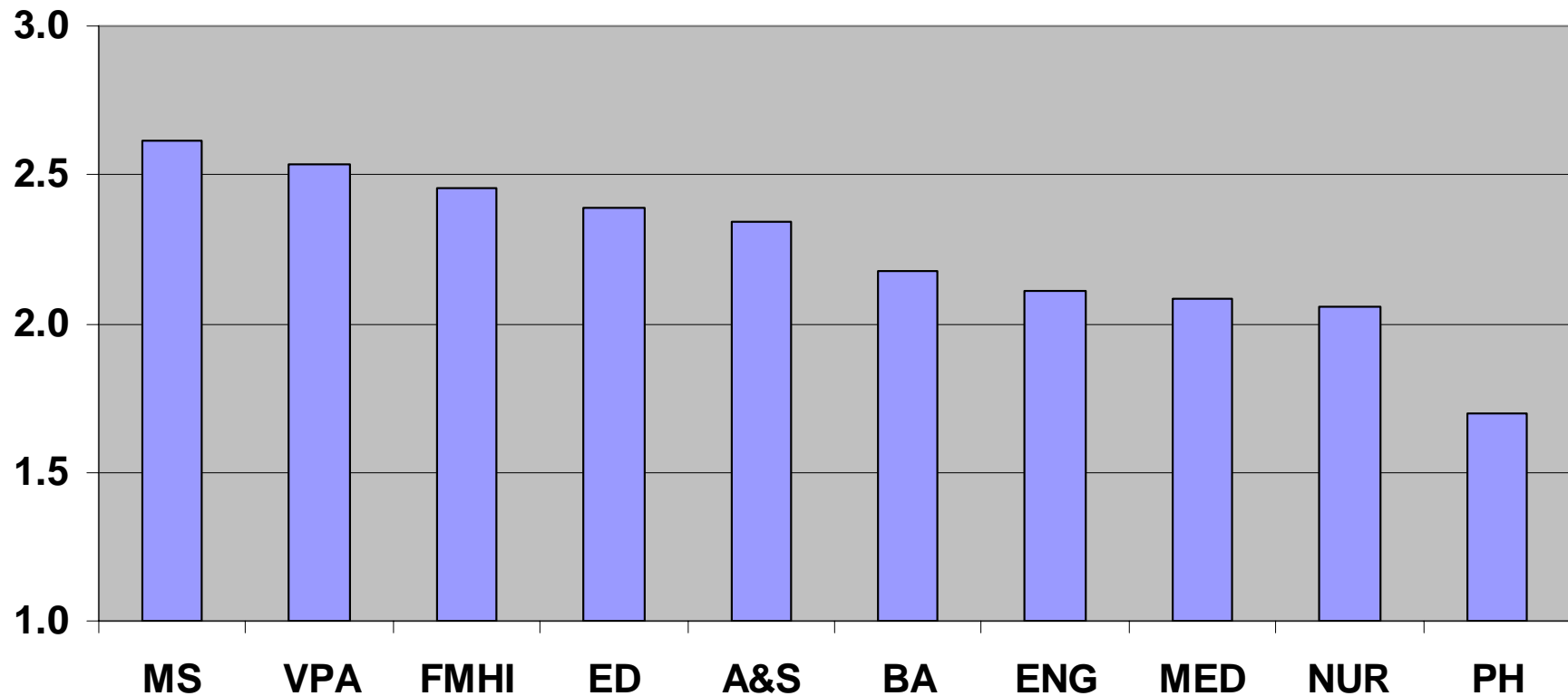
By Field controlling for Rank

	2. Equip & Space	6. Grant Inf/Compl	7. Post Award	9. Cler. & Bus
Sci & Eng	L		L	
Soc & Behav	L		L	L
Hlth/Hum Serv		L		L
Bus & Ed	H	H	H	H
Arts & Hum		H		
<i>mean</i>	.74	.55	1.01	.79

Other Differences

- Mean of ratings on specific items is lower than on global rating
- Most scale means differ significantly from one another
- Untenured faculty on tenure track rate overall support significantly higher than other faculty
- Support ratings are most strongly related to number of years at USF
- Faculty in health & human services field are more likely to use funding and social issues in choosing research topics

Self-Ratings of Scholarly Output By College (Adjusted for Differences by Rank)



Research Incentive Preferences

Preference Group	N	%
Favor recognition and all incentives: financial (salary, bonus, research expenses)	121	46%
Favor recognition as well as financial incentives for scholarly achievement, <u>not</u> grants	74	28%
Favor financial incentives only	68	26%



Open-Ended Questions

Qualitative Findings

- Faculty provided approximately 50 pages of comments in response to open-ended questions
- Both general (e.g., time, money, communication, fairness) and research-specific concerns identified
- Themes were consistent across range of items for specific sections
- Generative computer analysis by Elizabeth Tuten, Ed.D., still underway

General Issues

- Time
 - Adjustment of responsibilities would permit more research
 - Support and relief from burden of corollary tasks
- Funding
 - More or reallocated resources for specific needs
- Communication
 - Collegial, intra- & interdepartmental
- Parity
 - Fair access to resources & rewards

Selected Specifics: Infrastructure

- Bureaucratic systems
 - Very frequently mentioned, impede research
 - Also impede inter-unit collaboration
 - Financial systems still inefficient and error-prone
 - Ancillary research functions often experienced as rigid, complicated, or suboptimal (e.g., IRB, patents/licensing)
- Policies & Procedures
 - Cited as cumbersome & redundant, time-consuming, not user-friendly, and fragmented
 - Processes need simplification

Personnel & General Support

- Personnel support
 - Call for more clerical support throughout
 - Faculty cite need for bigger/better intellectual labor force for help with research/scholarship tasks
 - High level of bureaucracy in absence of support personnel diverts effort and reduces faculty research potential
- GA/RA support
 - Not enough, underpaid, not always adequately trained
- General support
 - Not evenly/fairly distributed
 - Little incentive or reward/acknowledgement for research
 - Little feeling of general support from University

Collaboration & Training

- Collegial/intellectual collaboration & support
 - Generally at low level
 - Culture & structure do not support team efforts
 - Lack of sounding boards
 - Lack of mentoring
- Training
 - Needed for faculty in necessary methodology (e.g., statistics) and procedures (grant preparation & submission)
 - Needed for support staff in all arenas, e.g. re: grants

Material Resources

- Space
 - Limitations in research space (both lab and other) limit research productivity
- Technology/equipment
 - Too often lacking or outdated, not rapidly repaired
- Library
 - Some faculty wish for more and more up-to-date holdings, expanded subscriptions, better access to electronic databases

Sample Narrative Responses (1)

- Infrastructure & grant support
 - “An adequate financial structure that aids instead of hinders research.”
 - “Experience has shows that major financial management errors are likely to occur unless the PI spends considerable time and effort monitoring financial transactions”
 - “We desperately need more pre-award people in the Research office.”
- Personnel
 - “I do all of my own statistical work, my own literature reviews, grant applications and paper submissions.”
 - “No secretarial help available to help with paperwork, follow-up etc issues”
 - “It’s amazing that research gets done here with the support that is available.”
 - “It is not possible to build a research organization without the participation of postdoctoral fellows.”

Sample Narrative Responses (2)

- Collegial collaboration & intellectual climate
 - “Need some mechanism by which there is more communication among faculty members across colleges for interdisciplinary research.”
 - “Faculty compete jealously for resources but seldom engage in any sort of intellectual community or cooperation.”
 - “A factory mentality prevails in my academic unit and productive scholars are held back, even ostracized.”
- Reward/acknowledgement
 - “Incentives for faculty to increase extramural funding.”
 - “Rewarding non-funded scholarly publications, which are the primary focus of most humanities and social science disciplines.”
- Training
 - “I say that the start-up [burden on] an assistant professor to learn about possible grant and USF’s support [is] prohibitive.”

Sample Narrative Responses (3)

- Space
 - “The lack of space to house research projects is a major concern.”
- Technology
 - “An inventory of equipment and funds set aside for repair or upgrade is essential.”
- Library
 - “The library needs to be improved for research in the humanities.”
- Funding
 - “Providing support (financial or otherwise) for pilot projects aimed at attracting and capturing external funds should be a high priority.”
 - “Be willing to commit funds to improve the research infrastructure at USF. This needs to be a significant investment.”
- Time
 - “They should be giving time off and financial support for faculty to put together large program grants.”



Summary, Conclusions, Plans

Summary: Overview

- Relatively substantial and representative response to a long survey – faculty view these issues as important
- Mean support ratings are in the medium to low range – significant room for improvement in all areas
- General university-wide themes underlie variations in specific areas across units, ranks, and other groups
- Limitations: response rate; problem orientation; no differentiation of sources of support

Critical Areas Identified Via Ratings

- Increasing the availability of research assistants
- Strengthening post-award administration
- Initiating, maintaining, and nurturing specific research capacities (project support)
- Making scholarship resources more available and facilitating scholarship, esp. for newer faculty and in USF Health
- Expanding space and equipment in the sciences
- Providing the necessary clerical support to optimize investment of faculty effort

Qualitative Additions

- Qualitative responses
 - Reinforce and expand on themes in quantitative data
 - Provide coverage of areas not explicitly addressed
 - Illustrate importance of thinking both globally and locally to optimize investments in research
 - Magnitude & scope show faculty commitment to improving research & intellectual climate
- Additional areas highlighted
 - Addressing general infrastructure limitations
 - Improving communication & collaboration

Implied Goals:

1. Efficiency/Effectiveness

- Implicit goal: Efficiency & effectiveness
 - Existing systems & structures function too often as obstacles rather than as pathways, impede progress, and waste precious resources (time, money, intellectual capital, and morale)
- Informing principle: Transformation (e.g.s in private sector, DOD, human services)
 - Align key systems, processes, incentives, organizational structure, and technologies with mission, strategy and objectives – emphasize rapid development & learning
 - Coordinate ongoing efforts and create partnerships that promote effective and efficient cross-organizational and cross-functional process improvements

2. Organizational Culture Change

- Implicit goal: Culture change
 - Organizational culture needs to express collegiality, nurturance of scholarly/research growth, team orientation, facilitative rather than obstructive style
- Informing principle: Complexity
 - Prediction- & control-oriented hierarchies have limitations: change can be facilitated but not driven from the top
 - Complex adaptive systems model useful for university
 - Cf. community-building: asset-based, internally focused, and relationship driven (Kretzmann & McKnight)

Plans

- Continue qualitative analysis, link qualitative findings to quantitative data
- Use findings to inform Research Council deliberations
- Develop article(s) for publication
- Final report to Dr. Chang & Provost Khator (12/06)
- ...





Supplemental Material: Complexity & Organizations

Contrasting Assumptions

(Olson EE & Eoyang GH, 2001)

TRADITIONAL APPROACH Systems develop through:	COMPLEXITY APPROACH Complex Adaptive Systems develop via:
Top-down control	Connections throughout the system
Predictable stages of development	Adaptation to uncertainty
Clear, detailed plans or goals	Emerging goals, plans and structures
Building consensus	Amplifying differences
Emphasizing differences between levels	Emphasizing self-similarity within the system
Closing the gap with an ideal	Goodness-of-fit with the environment

Complexity Framework: Introduction

(Axelrod & Cohen, 1999)

- **Elements**
 - Agent in environment
 - Strategy
 - Copying
 - Population
 - Variation in strategies
 - Selection
 - Adaptation
- **Complex system:** strong interactions among elements; current events influence p of later events
- **Complex adaptive system:** contains agents that seek to adapt
- **Coevolution:** multiple populations of agents adapt to each other
- **Harnessing complexity:** changing the structure of a system to increase performance via exploiting the understanding that the system is complex

The Core of Adaptive Organizations

Lewin & Regine (in Mittelton-Kelly, 2003)

- Leadership
 - Allowing rather than imposing
 - Accessibility, authenticity & care (making work meaningful)
 - Being attuned: listening, keeping systems open
- Culture of care & connection
 - Engenders trust; feeling of belonging; emphasis on relationships
- Human-oriented management is not just being nice
 - “Engaging the dynamics of a complex adaptive system (by) enhancing interactions & allowing mutual effect... leads to emergence of a creative and adaptable organization”