

Institutional Supports for Early Career Researchers During Crises: COVID-19 Pandemic Case Study

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Purpose: To understand how institutions can support faculty during crises in biomedical research, this study examined early career researchers (ECRs) experiences with institutional supports during the COVID-19 pandemic and their perspectives on how institutions can support professional recovery.

Subjects and Methods: This national, cross-sectional study evaluated professional and personal-related institutional supports offered to ECRs during the COVID-19 pandemic, the impact of these supports, and additional supports needed for professional recovery. An online survey was distributed electronically in fall 2021 to all individuals with F32 or K-level awards through the National Institutes of Health in 2020. Descriptive statistics, chi square tests, and thematic analysis summarized findings.

Results: Among 4,440 ECRs contacted, 1,587 ECRs (35.7%) responded to the survey, and 1,527 (34.4%) met inclusion criteria. Most respondents reported their institutions offered programs or services during the COVID-19 pandemic (81.3%, n=1241), including professional support(s) (76.8%, n=1172) and personal support(s) (43.6%, n=666). The most impactful support was mentoring programs, with 49.9% (n=402/806) reporting that it had positive impact, followed by personal assistants (48.4%, n=60/123) and bridge funding (for research: 42.4%, n=156/358; for salary: 41.7%, n=115/276). For coaching programs, bridge funding for salary, and elder care services, respondents indicated significant differences in the impact between expanded or new supports versus continued existing supports. Regarding institutional supports needed to support professional recovery, responses fell into six themes: caregiving support, mental health support, financial support, work support, career development support, and employment support.

Conclusion: This study provides novel insights into ECRs' perspectives on the supports offered by institutions during the COVID-19 pandemic and additional areas of need for professional recovery. Institutions must invest in relevant, effective, and accessible supports for ECRs to help them persist in scientific careers, particularly during periods of disruption and uncertainty.

Keywords: academic medicine, faculty, institutional leadership, organizational support, retention

Introduction

Early career researchers (ECRs) bring diverse perspectives, skills, and ideas to biomedical research that advance scientific innovation.¹ Despite their importance as the future of the biomedical workforce, ECRs experience unique challenges as they seek to demonstrate productivity and build their careers in a "publish or perish" academic culture.² For example, ECRs have limited funding, less established professional networks, job and geographic instability, and challenges balancing heavy workloads with growing family obligations.³ Further, female ECRs and ECRs of color confront additional barriers to professional advancement, including fewer opportunities for funding and professional development, greater caregiving responsibilities, and lower retention rates in academia.⁴⁻⁸

As ECRs navigate these challenges, institutions have a critical role in supporting their careers. Literature details varied supports such as institutional funds and startup packages, faculty mentorship programs, as well as childcare and mental health initiatives.⁹ These supports are shown to promote positive results, such as improved career satisfaction and

increased productivity.^{3,10} When institutions invest in their ECRs, they also benefit by improving retention and reducing faculty turnover costs.¹¹ In fact, studies show that the average annual cost of faculty turnover in academic medicine is between \$88,000 and \$1 million, highlighting strong economic incentives to foster faculty success.^{12,13}

Institutional supports are particularly important during crises. In 2025, researchers across the United States are facing unprecedented times with the recent federal actions resulting in funding cuts that have paused and ceased critical biomedical research.^{14–17} These cuts have detrimental effects on ECRs at a time when they are establishing their careers and advancing science through mentored research.¹⁸ Similarly, the COVID-19 pandemic disrupted research due to health and safety concerns. Researchers experienced decreased productivity, fewer funding opportunities, limited mentorship and networking opportunities, and interrupted career advancement.^{3,19–25} On a personal level, researchers experienced social isolation, mental health stressors, and limited childcare support.^{20,22–26} Furthermore, ECRs from underrepresented backgrounds bore a disproportionate burden of the challenges during the pandemic, potentially exacerbating existing inequities.^{3,25} Pandemic-related disruptions negatively impacted ECR's ability to complete research and demonstrate productivity, with ripple effects on the ability to apply for grants or secure job promotions.

Despite the potential benefits of institutional support and the negative impacts of the COVID-19 pandemic on ECRs, limited data exists about how institutions supported ECRs during the COVID-19 pandemic. To address this gap, this study examined ECRs' experiences with institutional support provided during the pandemic and their perspectives on how academic research institutions can support professional recovery. This study can help institutions better support faculty, particularly those in vulnerable groups, during periods of uncertainty and upheaval in the biomedical research field – a topic that is relevant now more than ever.

Materials and Methods

This national, cross-sectional study surveyed ECRs across the United States to evaluate the career impacts of the COVID-19 pandemic and institutional supports offered during this period. ECRs were defined as research investigators with active F32 (Postdoctoral fellowship) or K (Career development) level awards from the National Institutes of Health in 2020, identified through publicly available data (name, Email addresses).²⁷ This study received exemption from the University of Chicago Biological Sciences Division Institutional Review Board (IRB21-1393) due to the study's minimal risks to subjects (45 CFR § 46.102(i)). It also complies with the Declaration of Helsinki.

Survey Instrument

The survey methodology has been detailed in a prior publication.²⁵ The survey was distributed electronically via Email to ECRs between September and December 2021. Participants provided informed consent by proceeding with the survey after an introduction describing its purpose, procedures, voluntary and anonymous nature, as well as plans to share results, including anonymous responses. Whereas the prior publication focused on survey questions regarding the impact of the COVID-19 pandemic on ECR's professional and personal lives, this manuscript focuses on separate content of the survey, specifically institutional supports for ECRs during the COVID-19 pandemic.

Respondents were asked to report programs or services offered by their institutions to support their productivity since the start of the pandemic in March 2020. Professional supports included bridge funding for research projects, bridge funding for salary/effort to conduct research, mentoring programs, coaching programs, and leave policies. Personal supports included childcare services for children under five years of age, back up childcare services, tutoring for school-aged children, elder care services, and personal assistants. The survey asked whether each of these supports were offered with five response options: not offered, continued existing program, expanded existing program, started new program, I do not know.

When a respondent indicated that a support was offered (continued, expanded, started), they were asked to rate its impact on them on a 3-point scale (positive impact/no impact/negative impact) or state if it was “not applicable” to them. Next, respondents were asked two free-response questions: (1) “What would be most helpful for minimizing the negative impact of the COVID-19 pandemic?” and (2) “Share any additional thoughts or details about what would help you professionally recover from the COVID-19 pandemic.” Finally, respondents were asked to report their demographics and characteristics, including graduation year with highest professional degree, gender identity, sexual orientation, race and ethnicity, educational degree, type of research, type of award, academic rank, and whether one had caretaking responsibilities.

Data Analysis

Descriptive statistics summarized demographics and characteristics, institutional supports offered, and impact of institutional supports offered. All continued, expanded, or started institutional supports were categorized as “offered.” Expanded and started supports were further combined to constitute “adapted” supports, in contrast to “continued” supports. The impact of each offered institutional support was assessed based on the proportion of researchers rating “positive impact” for that support. Chi squared tests compared whether continued or adapted supports were more common and whether they had differential impacts on respondents. Analyses used R Studio software.

Thematic analysis was conducted for open-ended questions on supports needed to minimize the impact of the pandemic and promote professional recovery.²⁸ Three individuals (LA, ET, MK) analyzed compiled responses to the two open-ended questions and applied deductive reasoning to identify and categorize recurring themes and subthemes.²⁹ The research team (LA, ET, MK, AV) iteratively reviewed findings, discussed discrepancies, and refined themes and subthemes to establish consensus. ID numbers were used in the analysis to ensure that participants’ perspectives were well-represented and removed at the end to maintain anonymity.

Results

Demographics and Professional Characteristics

Among the 4,440 ECRs contacted, 1,587 (35.7%) responded to the survey and 1,527 (34.4%) met inclusion criteria for this study (Table 1). The most common year of graduation of highest degree was 2011–2015 (39.7%, n=606). Most respondents identified as heterosexual women (57.8%, n=883), and a small proportion identified as LGBTQ (8.3%, n=126). Most respondents were

Table 1 Demographics and Characteristics of Respondents to Cross-Sectional Survey of Early Career Researchers, United States, 2021 (n=1527)

Demographics and Characteristics	N	%
Year of highest degree		
Before 2011	439	28.7
2011-2015	606	39.7
2016-2021	475	31.1
Unknown (Prefer not to respond)	7	0.5
Gender identity and sexual orientation		
Heterosexual female	883	57.8
Heterosexual male	466	30.5
LGBTQ	126	8.3
Unknown (Prefer not to respond)	52	3.4
Race and ethnicity		
White, non-Hispanic	1008	66.0
Asian, non-Hispanic	248	16.2
Black or African-American, non-Hispanic	52	3.4
Hispanic, Latino, or Spanish origin	114	7.5
Multiracial or Other	60	3.9
Unknown (Prefer not to respond)	45	3.0

(Continued)

Table 1 (Continued).

Demographics and Characteristics	N	%
Education		
PhD	917	60.1
MD, DO, MBBS	393	25.7
MD/PhD	193	12.6
Other	18	1.2
Unknown (Prefer not to respond)	6	0.4
Type of research		
Laboratory	570	37.3
Clinical	519	34.0
Epidemiology/Public Health	372	24.4
Other	66	4.3
Type of award		
K (Career development)	1231	80.6
F (Postdoctoral fellowship)	251	16.4
Other	45	3.0
Academic Rank		
Instructor	86	5.6
Assistant Professor	900	58.9
Associate Professor	165	10.8
Professor	5	0.3
Other	287	18.8
None	73	4.8
Unknown (Prefer not to respond)	11	0.7
Caretaking responsibilities		
For child(ren)	919	60.2
For sibling(s)	7	0.5
For parent(s)	142	9.3
For grandparent(s)	19	1.2
For other person(s)	21	1.4
None	542	35.5

White (66.0%, n=1,008), assistant professors (58.9%, n=900), and held PhD degrees (60.1%, n=917). The most common research field was laboratory (37.3%, n=570) or clinical research (34.0%, n=519), followed by epidemiology/public health (24.4%, n=372). Over half reported having caretaking responsibilities for children (60.2%, n=919).

Institutional Supports Offered During COVID-19 Pandemic

Most respondents reported that they were offered one or more institutional supports during the COVID-19 pandemic (81.3%, n=1241) (Table 2).

Regarding professional supports, about three-quarters of respondents reported that their institution offered one or more supports (76.8%, n=1172). The most reported professional supports were mentoring programs (58.7%, n=897) and leave policies (46.2%, n=706). Less commonly reported professional supports were bridge funding for research (31.6%, n=482), coaching programs (28.3%, n=432), and bridge funding for salaries (24.6%, n=376).

Regarding personal supports, less than half of respondents reported that their institution offered one or more supports (43.6%, n=666). The most reported personal support was backup childcare services (33.2%, n=507). Less commonly reported personal supports included childcare services for children under five years old (22.1%, n=337), personal assistants (10.0%, n=152), elder care services (7.5%, n=114), and tutoring for school-aged children (6.4%, n=97).

A small percentage reported other supports offered (3.5%, n=54). When asked to describe other supports offered in free response, respondents listed health programs and services, financial support, caregiving support, work policies, and adapted promotion timelines (Table 3).

For the majority of supports, respondents were significantly more likely to report that they were continued rather than adapted (Table 2), including mentoring programs (78.4% vs 21.6%, $p<0.001$), bridge funding for research projects (56.8% vs 43.2%, $p=0.003$), coaching programs (70.1% vs 29.9%, $p<0.001$), bridge funding for salary (61.4% vs 38.6%, $p<0.001$), childcare services for children under 5 years (57.9% vs 42.1%, $p=0.004$), personal assistants (81.6% vs 18.4%, $p<0.001$), and eldercare services (65.8% vs 34.2%, $p<0.001$). There were no significant differences in the number of respondents reporting continued versus adapted supports for leave policies, backup childcare services, or tutoring for school-aged children.

Table 2 Percent of Respondents Reporting Programs Offered by Institutions During COVID-19 Pandemic in a Cross-Sectional Study of Early Career Researchers, United States, 2021 (n=1527)

	Total		Continued		Adapted		p-value
	n	%	n	%	n	%	
All supports^a	1241	81.3					
Professional supports^a	1172	76.8					
Mentoring programs	897	58.7	703	78.4	194	21.6	<0.001
Leave policies	706	46.2	346	49.0	360	51.0	0.6
Bridge funding for research projects	482	31.6	274	56.8	208	43.2	0.003
Coaching programs	432	28.3	303	70.1	129	29.9	<0.001
Bridge funding for salary/effort to conduct research	376	24.6	231	61.4	145	38.6	<0.001
Personal supports^a	666	43.6					
Backup childcare services	507	33.2	267	52.7	240	47.3	0.2
Childcare services for children under 5 years	337	22.1	195	57.9	142	42.1	0.004
Personal assistant	152	10.0	124	81.6	28	18.4	<0.001
Elder care services	114	7.5	75	65.8	39	34.2	<0.001
Tutoring for school-aged children	97	6.4	40	41.2	57	58.8	0.08
Other	54	3.5	12	22.2	42	77.8	<0.001

Notes: ^aReflects the number of respondents reporting one or more supports.

Table 3 Other Programs or Services Offered by Institutions During COVID-19 Pandemic Reported by Respondents of Cross-Sectional Study of Early Career Researchers, United States, 2021 (n=54*)

Program or Service	Examples
Health programs and services	Mental health services (hotlines, complimentary therapy)
	Wellness programs (general wellness, emotional wellbeing)
Financial support for work	Stipends for work-from-home costs and home office supplies
	Institutional awards for new mothers to support productivity
	COVID-19 research funds and small grants
Caregiving support	Caregiving subsidies, grants, relief funds, and reimbursements
	Summer programming for children
	Support groups for mothers
Work policies	Expanded or new leave policies
	Extra paid time off
	Work-from-home policies
	Limiting meetings
Adaptations of promotion timelines	Extended promotion timelines
	Extended or stopped tenure clocks
Other supports	Temporary housing programs
	Employee assistance program
	Editorial services

Notes: *A total of 54 respondents indicated that other supports were offered by their institution; of them, 48 described specific programs or services as listed in this table.

Impact of Institutional Supports Offered During COVID-19 Pandemic

Respondents reported that institutional supports varied in impact (Table 4). About half of respondents indicated that mentoring programs had a positive impact (49.9%, n=402/806). Bridge funding for research was the next most impactful

Table 4 Impact of Institutional Supports Offered During the COVID-19 Pandemic, as Reported by Respondents of a Cross-Sectional Study Among Early Career Researchers, United States, 2021 (n=1241)

	Respondents Reporting Positive Impacts						p value
	Total		Continued		Adapted		
	n/n Total ^a	%	n/n Total ^a	%	n/n Total ^a	%	
Professional supports							
Mentoring programs	402/806	49.9	308/637	48.4	94/169	55.6	0.1
Leave policies	127/533	23.8	54/257	21.0	73/276	26.4	0.1
Bridge funding for research projects	156/368	42.4	69/206	33.5	87/162	53.7	0.6
Coaching programs	121/328	36.9	70/220	31.8	51/108	47.2	0.009
Bridge funding for salary/effort to conduct research	115/276	41.7	53/167	31.7	62/109	56.9	<0.001

(Continued)

Table 4 (Continued).

	Respondents Reporting Positive Impacts						p value
	Total		Continued		Adapted		
	n/n Total ^a	%	n/n Total ^a	%	n/n Total ^a	%	
Personal supports							
Backup childcare services	74/380	19.5	35/209	16.7	39/171	22.8	0.2
Childcare services for children under 5 years	62/237	26.2	40/135	29.6	22/102	21.6	0.2
Personal assistant	60/123	48.8	47/100	47.0	13/23	56.5	0.6
Elder care services	2/68	2.9	0/48	0.0	2/20	10.0	0.03
Tutoring for school-aged children	5/65	7.7	0/29	0.0	5/36	13.9	0.06
Other	22/44	50.0	1/9	11.1	21/35	60.0	0.02

Notes: ^an total reflects respondents who report that the support was offered and that the support applied to them.

support (42.4%, n=156/368), followed by bridge funding for salary (41.7%, n=115/276), coaching programs (36.9%, n=121/328), and leave policies (23.8%, n=127/533). For personal supports, personal assistants were the most impactful, with 48.8% (n=60/123) reporting positive impact, followed by childcare services for children under 5 years (26.2%, n=62/237) and backup childcare services (19.5%, n=380). The least impactful personal supports were tutoring for school-aged children and eldercare services, with 7.7% (n=5/65) and 2.9% (n=2/68) reporting positive impacts, respectively.

Respondents reported varied impacts of continued versus adapted supports. Respondents were more likely to report positive impacts for adapted supports rather than continued supports for several measures, including coaching programs (47.2% vs 31.8%, p=0.009), bridge funding for salaries (56.9% vs 31.7%, p<0.001), and eldercare services (20.0% vs 0.0%, p=0.03). There were no significant differences in the positive impact of adapted versus continued supports for mentoring programs, leave policies, bridge funding for research projects, backup childcare services, childcare services for children under 5 years, personal assistants, or tutoring for school-aged children.

Additional Institutional Supports Needed for Professional Recovery

In free responses, respondents described additional institutional supports that would help them recover from the pandemic's effects (Table 5). Six key themes arose: caregiving support, mental health support, financial support, work support, career development support, and employment support.

Respondents described a need for caregiving support to recover professionally. These supports included accessible resources for researchers with children. One respondent shared,

At this point the strain of trying to work without adequate childcare has led to extreme burnout. To actually recover, I think I would need much more...financial help, housekeeping help, help getting healthy meals on the table, and tutoring support to help my kids recover from learning loss.

Caregiving supports also included institutional flexibility, such as accommodations for parental leave, nursing mothers, and sick leave for family illnesses. Respondents also advocated for greater institutional understanding of family obligations, with one stating they needed “more intentional supports for parents with young children and an acknowledgment of the challenges.” The importance of caregiving supports is highlighted by one respondent who stated, “If we want to keep women in the field, the field needs to support childcare!”

Additionally, respondents stressed the importance of mental health support to recover professionally from the pandemic. One respondent shared, “The pandemic triggered a lot of mental health difficulties that have impacted my work and motivation.” Another shared, “It’s important to recover first the mental health, energy and motivation to come back to similar levels of pre-pandemic productivity.” Respondents suggested that institutions can support their mental

Table 5 Thematic Analysis of Free-Response Questions About Supports Needed to Minimize Negative Impact of COVID-19 Pandemic for Professional Recovery Reported by Respondents of Cross-Sectional Study of Early Career Researchers, United States, 2021

Theme	Subtheme	Illustrative Quotes
Care-giving support	Accessible resources for researchers with children	"Affordable childcare or backup childcare options"
		"People need help with their care responsibility - especially childcare. if we want to keep women in the field, the field needs to support childcare!"
		"At this point the strain of trying to work without adequate childcare has led to extreme burnout. To actually recover, I think I would need much more...financial help, housekeeping help, help getting healthy meals on the table, and tutoring support to help my kids recover from learning loss."
	Institutional flexibility	"Flexible leave to manage school quarantines or illnesses in the family."
		"Better accommodations for paternal leave, as well as maternal leave."
		"Support flexibility for new and nursing mothers."
	Understanding of family obligations	"Broad understanding that the negative impacts of COVID were exponentially multiplied for those of us with young children and consideration of those impacts in publishing, grants, job applications, and tenure/ promotion."
		"More understanding that the pandemic has impacted everyone, but to a different extent... and parents with (young) children [or] other caretakers have been disproportionately affected and it will take a long time before people have recovered from this setback."
		"More intentional supports for parents with young children and an acknowledgement of the challenges. The message I got early in the pandemic from some in leadership positions was that I could use the time to write additional papers etc - this was very demoralizing and represented a complete lack of understanding of challenges faced by early career faculty."
Mental health support	Accessible mental health services	"Easy access to mental health providers. I keep calling and it feels like I never get to where I need to be."
		"I have very little access to therapy...previous institutions I have been a part of have had therapy for students, faculty, and staff members. Would be helpful."
	Institutional support for mental health	"Having higher-ups display explicit support and understanding of mental health challenges."
		"Training for my advisor on how to handle mental health crises would be HUGE."
		"The pandemic triggered a lot of mental health difficulties that have impacted my work and motivation. Offering peer groups where people can talk about their experiences and reflect on how things may have changed, etc., might help with some of these aftereffects."
Financial support	Work compensation	"Continued salary support would be helpful to minimize time lost for research projects."
		"Increased salary for research staff"
		"Bonuses for clinical work performed during the pandemic"
	Grant funding	"Increasing grant funding support."
		"Grant funding to pick up on projects that were slowed down during the pandemic"
		"I think a lot of researchers on K grants, especially those with young children, are going to struggle to transition to R01s in the normal amount of time; researchers who cared for young children and/or elders during the pandemic are going to be at a distinct disadvantage compared to those who did not...increasing bridge funding for K grantees, offering new grant types that might allow a bridge to R01 for new investigators... would all be helpful."
	Work arrangement funding	"Increased support for working from home (eg, funds for purchasing computer and office supplies)."
		"If the institution would partially reimburse employees working from home for the cost of AC, heat, water, electricity, WiFi."
		"Increased financial support from university in resuming lab work."

(Continued)

Table 5 (Continued).

Theme	Subtheme	Illustrative Quotes
Work support	Flexible work logistics	"Continued flexibility in accommodating work schedules (hybrid/remote work)."
		"Continued support for practicing telemedicine to allow flexibility in my work schedule and reduce burden of commuting."
		"Keep the things that were helpful - flexible work schedules, work from home, Zoom links to meetings, telehealth, etc."
	Adjusted work responsibilities	"Decreased clinical responsibilities over the coming year to account for the additional (unpaid, unrecognized) clinical time I did during the pandemic. Decreased administrative duties (which do not count toward effort and are 'voluntary.')
		"Decrease clinical effort, decrease educational and administrative loads to conduct research."
	Adjusted work expectations	"I think reducing work expectations would help minimize the impact. Despite the ongoing pandemic, my expectations for appointment and promotion remain the same - in regard to publishing productivity and obtaining grant funding, and progress on my K23 research project."
		"Understanding that the decrease in productivity is not tied to my capabilities as a scientist and instead is a consequence of the pandemic."
	Flexible research timelines	"Additional protected time and funds to complete data collection or at the very least, additional protected time so I can submit more and better grants."
		"Extended timelines for academic productivity and grant aims."
		"Providing extensions for time as a postdoc, or funding, to make up for the delayed research."
	Research resources	"More resources devoted to facilitating research."
		"Concentration of lab and department resources to accelerate my research projects to recover lost progress"
	Personnel support	"Increased staffing to improve work balance and minimized exhaustion throughout the institution"
		"A personal assistant (even if shared among a few faculty) would be immensely helpful."
Career development support	Support for under-represented faculty	"People actually caring about women and minorities and academia and putting real resources in retaining and promoting them."
		"Appoint women with young children to leadership positions and give them funding and power and support to help. Appoint people of color to leadership positions and give them funding and power and support to help."
		"Support women in science...I find myself in a climate with even fewer women. Women and Men have different needs in the workplace and women's needs are rarely addressed even when there is gender parity, let alone when women are rare."
	Networking opportunities	"More opportunities to showcase my work and network."
		"Mentoring programs that foster new connections and strengthen existing ones professionally."
		"More opportunities to network and collaborate to reduce isolation."
	Coaching opportunities	"Additional coaching resources to help prioritize my efforts would have been extremely helpful."
		"More focus on mentoring and coaching to help younger investigators make up productive research time lost to COVID."
	In-person opportunities	"Ability to attend in-person meetings/conferences."
		"I believe that the biggest positive impact would be the ability to resume regular in-person training and unplanned interactions with colleagues and potential collaborators."

(Continued)

Table 5 (Continued).

Theme	Subtheme	Illustrative Quotes
Employment support	Availability of job opportunities	"More academic jobs/restructuring academic science so that there are more options for long-term scientific work outside of being tenure-track faculty."
		"More jobs becoming available. I am ready to transition but cannot find a position that is a good fit."
	Adjustment to tenure and promotion processes	"Reframing the tenure process to make it more equitable (less focus on quantity and more on quality)"
		"I think there needs to be an honest re-evaluation of promotion criteria. The impact is not just limited to 1 year. The grants not submitted, pilot data not collected, manuscripts not written will be reflected on my CV for years to come."
		"It would be much better to change the criteria for evaluating promotion/tenure given that much of the delay impact[s] women as well as faculty of color, who at baseline were less likely to be promoted or tenured compared to men or White faculty."
	Flexible leave policies and time off	"More acceptable and flexible leave policies"
		"I think I need some protected time to heal on a personal level, but the clock keeps ticking and the pressure to produce never ceases. I am worried that it will be too difficult to recover professionally at this point and seems easier to simply change directions."
		"I think that the importance of taking vacations during which I can completely disconnect from work feel even more critical now. As a university we need to change the culture of always being available at work - even during vacations. We need to feel it is ok to unplug and go off the grid. The psychological break is important."

health by training faculty leaders about mental health and offering access to resources like peer support groups and mental health providers.

Another key theme was financial support. Respondents expressed the need for greater work compensation, such as bonuses for clinical work performed during the pandemic or increased salary support to minimize time lost for research projects. Respondents also described a need for grant funding support "to pick up on projects that were slowed down during the pandemic." Finally, respondents described a need for funding for modified work arrangements such as work-from-home or resuming previously paused work.

Respondents described work supports needed for professional recovery, including flexible work logistics, adjusted work responsibilities and expectations, flexible research timelines, and additional research resources. Flexible work logistics included accommodating hybrid work schedules and allowing work from home. Adjusted work responsibilities included accommodations given pandemic-related changes in effort distributions. For instance, one respondent stated that supports should include "decreased clinical responsibilities over the coming year to account for the additional (unpaid, unrecognized) clinical time I did during the pandemic." Respondents also advocated for institutions to adjust work expectations. One respondent stated it would be beneficial for institutions to show an "understanding that the decrease in productivity is not tied to my capabilities as a scientist and instead is a consequence of the pandemic." Respondents also argued for flexible research timelines, such as grant extensions. Finally, respondents described a need for additional research resources, such as a "concentration of lab and departmental resources" or personnel support in the form of research staff and personal assistants. One respondent stated, "A personal assistant (even if shared among a few faculty) would be immensely helpful."

Respondents described the need for career development support to support pandemic recovery. They expressed a need for in-person opportunities, with one arguing that,

I believe that the biggest positive impact would be the ability to resume regular in-person training and unplanned interactions with colleagues and potential collaborators.

They also suggested networking and coaching supports, with one respondent stating, "More focus on mentoring and coaching to help younger investigators make up productive research time lost to COVID." Respondents also described

the need for specialized support for underrepresented faculty. For example, one respondent stated they need “people actually caring about women and minorities and academia and putting real resources in retaining and promoting them.”

Another theme was employment support. One area of support that respondents suggested included adjustments to tenure or promotion like re-evaluations of promotion criteria. For example, one respondent stated,

It would be much better to change the criteria for evaluating promotion/tenure given that much of the delay impact[s] women as well as faculty of color, who at baseline were less likely to be promoted or tenured compared to men or White faculty.

Additionally, respondents suggested that flexible leave policies and time off would support their recovery, as one respondent shared, “more time off would help me mentally and emotionally rest.” Finally, respondents shared that they needed more job opportunities. One respondent explained that they needed “more academic jobs/restructuring academic sciences so that there are more options for long-term scientific work outside of being tenure-track faculty.”

Discussion

This cross-sectional study examined ECRs’ experiences with institutional supports during the COVID-19 pandemic and their perspectives on how institutions can best support professional recovery and/or advancement in the setting of such crises or disruptions. Mentorship programs, bridge funding, and personal assistants were the most positively rated supports by respondents in this study. While the impact of all offered supports was overall limited, certain adapted supports were more positively rated than continued supports, including coaching programs, bridge funding for salary, and elder care services. Further, respondents described additional institutional supports that can aid their professional recovery, ranging from caregiving and mental health supports to financial and employment support. These findings highlight the need for institutions to provide multifaceted supports to help ECRs persist in scientific careers, especially during crises or disruptions. To do so, institutions must iteratively assess faculty needs to implement tailored interventions that address their varied and shifting needs.

To best bolster retention and success of ECRs, institutions should actively deploy multifaceted and broad supports, both professional and personal, during times of crises. Compared to established researchers, ECRs require more institutional support because they are less likely to have extensive support staff, more likely to face urgent pressures such as securing funding and submitting publications, and more likely to have caretaking responsibilities for young children.³⁰ Professional-oriented institutional supports have been long described in scientific literature. For instance, mentorship has been found to improve research productivity, work satisfaction, self-efficacy, and career success among researchers, including women and minorities.^{31–37} Professional development in the form of workshops, coursework, and seminars has been shown to help postdoctoral researchers publish more papers and achieve greater career satisfaction and success.^{38,39} Limited literature describes other professional supports (eg, bridge funding) or personal supports (eg, personal assistants, childcare, mental health), suggesting that institutions do not offer these types of supports as frequently. Despite this, in our study, respondents rated bridge funding among the most positively rated supports. More research is needed to understand how bridge funding benefits ECRs. While ECRs in this study less commonly reported that their institution offered personal supports, there was growing recognition during the COVID-19 pandemic that such supports are critical. Pandemic disruptions blurred work–life balance and revealed researchers’ intertwined professional and personal needs, particularly related to caregiving responsibilities and mental health.^{9,25,40–42} ECRs in this study described an array of supports that can support professional recovery, such as mental health services, caregiving accommodations, additional funding, leave policies, career development programming, and adjusted work responsibilities and research timelines. The diversity of responses indicate that offered institutional supports are not one-size-fits-all, and various combinations of supports are needed to support individual ECRs.

Our study also elucidates the importance of institutional adaptability. The COVID-19 pandemic exacerbated and exposed the unique challenges that ECRs face, pushing funding agencies and academic institutions to rethink how to support them.^{9,43} Respondents in our study more frequently rated adapted supports as having a positive impact than continued supports for coaching programs, bridge funding for salary, and eldercare services. This finding suggests that, during crises or disruptions, institutions that adjust programs (through expansion of existing programs or creation of new programs) may better address faculty needs than institutions that maintain the status quo. Such insights are

particularly important as researchers have experienced significant shifts over the last five years, from challenges during the pandemic that resulted in personal and professional difficulties to recent federal actions that have impacted research funding and progress. In addition to offering tailored supports, institutions should ensure that they are effective and are reaching their intended populations. In our study, just under half of ECRs rated mentorship programs and personal assistants as having a positive impact. Some supports, like tutoring for school-aged children and eldercare services, were rated as positive by only a small proportion of respondents. These findings suggest that not all institutional supports are having their intended impact. To address this, institutional leaders should also become familiar with the scope and depth of faculty needs, as well as barriers they face to optimally accessing supports.⁴⁴ Institutions should iteratively evaluate the accessibility, utilization, and effectiveness of their supports to understand whether they are worthwhile investments.

This study has several limitations. We assessed institutional supports as they were perceived by respondents. Respondents may not have been aware of certain programs, so the findings may not fully reflect the landscape of institutional supports during the pandemic. Because this study examined institutional supports provided 18 months after the start of the pandemic, recency bias may have influenced responses. Response bias may also be at play, as respondents may have differed in terms of demographic and professional characteristics as well as had different perceptions and experiences than non-respondents. We collect graduation year of highest degree in lieu of collecting age; however, these variables may variably impact the results. Additionally, not all ECRs are F32 and K awardees, and thus the study findings may not be generalizable to all researchers in the early career stage. Finally, these findings about the pandemic may not be generalizable to all periods of crisis or disruption that faces science, as faculty and institutions may face different challenges and have varied abilities to respond.

Conclusion

In summary, institutional support is critical for the professional advancement and wellbeing of ECRs. Institutions must be willing to invest in faculty continuously, especially during periods of disruption and uncertainty. Ongoing support to mitigate external crises beyond the control of faculty can provide levels of certainty and stability necessary for faculty retention and success. To do so effectively, institutional leadership should aim to understand their faculty's unique and shifting needs. Once needs are identified, institutions should provide multifaceted, tailored, and timely supports. Strong institutional support of ECRs now fosters the success of researchers and scientific advancement in our nation for decades to come.

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References

1. Kent BA, Holman C, Amoako E, et al. Recommendations for empowering early career researchers to improve research culture and practice. *PLoS Biol.* 2022;20(7):e3001680. doi:10.1371/journal.pbio.3001680
2. Fien S, Sahay A, Watson R, Cleary M. Early career researchers: will they perish before they publish? *Nurse Author Ed.* 2022;32(1):4–7. doi:10.1111/nae2.32
3. Humphries BA, Hwang PY, Kendrick AA, Kulkarni RP, Pozzar RA, Martin RS. Overstretched and overlooked: solving challenges faced by early-career investigators after the pandemic. *Trends Cancer.* 2021;7(10):879–882. doi:10.1016/j.trecan.2021.07.005
4. Ginther DK, Schaffer WT, Schnell J, et al. Race, ethnicity, and NIH research awards. *Science.* 2011;333(6045):1015–1019. doi:10.1126/science.1196783

5. Hoppe TA, Litovitz A, Willis KA, et al. Topic choice contributes to the lower rate of NIH awards to African-American/black scientists. *Sci Adv*. 2019;5(10):eaaw7238. doi:10.1126/sciadv.aaw7238
6. Oliveira DFM, Ma Y, Woodruff TK, Uzzi B. Comparison of national institutes of health grant amounts to first-time male and female principal investigators. *JAMA*. 2019;321(9):898–900. doi:10.1001/jama.2018.21944
7. Sege R, Nykiel-Bub L, Selk S. Sex differences in institutional support for junior biomedical researchers. *JAMA*. 2015;314(11):1175–1177. doi:10.1001/jama.2015.8517
8. Zambrana RE, Hardaway CR, Neubauer LC. Beyond role strain: work–family sacrifice among underrepresented minority faculty. *J Marriage Fam*. 2022;84(5):1469–1486. doi:10.1111/jomf.12865
9. Gibson EM, Bennett FC, Gillespie SM, et al. How support of early career researchers can reset science in the post-COVID19 world. *Cell*. 2020;181(7):1445–1449. doi:10.1016/j.cell.2020.05.045
10. Sawarkar R, Scherz-Shouval R, Denzel MS, Saarikangas J. Chaperoning junior faculty. *EMBO Rep*. 2019;20(1):e47163. doi:10.15252/embr.201847163
11. Kraimer ML, Seibert SE, Wayne SJ, Liden RC, Bravo J. Antecedents and outcomes of organizational support for development: the critical role of career opportunities. *J Appl Psychol*. 2011;96(3):485–500. doi:10.1037/a0021452
12. Schloss EP, Flanagan DM, Culler CL, Wright AL. Some hidden costs of faculty turnover in clinical departments in one academic medical center. *Acad Med J Assoc Am Med Coll*. 2009;84(1):32–36. doi:10.1037/a0021452
13. Shanafelt T, Goh J, Sinsky C. The business case for investing in physician well-being. *JAMA Intern Med*. 2017;177(12):1826–1832. doi:10.1001/jamainternmed.2017.4340
14. Kozlov MR. NIH research grants still frozen despite lawsuits challenging Trump order. *Nature*. 2025;638(8052):870–871. doi:10.1038/d41586-025-00540-2
15. Defending Women From Gender Ideology Extremism And Restoring Biological Truth To The Federal Government. The White House. Available from: <https://www.whitehouse.gov/presidential-actions/2025/01/defending-women-from-gender-ideology-extremism-and-restoring-biological-truth-to-the-federal-government/>. Accessed April 30, 2025.
16. Ending Radical And Wasteful Government DEI Programs And Preferencing. The White House. Available from: <https://www.whitehouse.gov/presidential-actions/2025/01/ending-radical-and-wasteful-government-dei-programs-and-preferencing/>. Accessed April 30, 2025.
17. Hwang I, Huang J, Anthes E, Migliozi B, Mueller B. The gutting of America's medical research: here is every canceled or delayed N.I.H. grant. *The New York Times*. Available from: <https://www.nytimes.com/interactive/2025/06/04/health/trump-cuts-nih-grants-research.html>. Accessed July 2, 2025.
18. Kimbis TP. Federal research instability risks postdoc careers, American leadership. STAT. Available from: <https://www.statnews.com/2025/03/13/postdoc-crisis-national-postdoctoral-association-survey-trump-nih-nsf/>. Accessed July 2, 2025.
19. Cahusac de Caux B. The effects of the pandemic on the research output and strategies of early career researchers and doctoral candidates. In: de Caux B C, Pretorius L, Macaulay L editors. *Research and Teaching in a Pandemic World: The Challenges of Establishing Academic Identities During Times of Crisis*. Springer Nature; 2022:361–374. doi:10.1007/978-981-19-7757-2_24
20. Chuang L S. Labs in the time of COVID: an early-career scientist's view. *Dis Model Mech*. 2020;13(6):dmm046151. doi:10.1242/dmm.046151
21. Denfeld Q, Erickson E, Valent A, et al. COVID-19: challenges and lessons learned from early career investigators. *J Womens Health*. 2020;29(6):752–754. doi:10.1089/jwh.2020.8552
22. Doyle JM, Morone NE, Proulx CN, et al. The impact of the COVID-19 pandemic on underrepresented early-career PhD and physician scientists. *J Clin Transl Sci*. 2021;5(1):e174. doi:10.1017/cts.2021.851
23. Kliment CR, Barbash IJ, Brenner JS, et al. COVID-19 and the early-career physician-scientist. Fostering resilience beyond the pandemic. *ATS Sch*. 2021;2(1):19–28. doi:10.34197/ats-scholar.2020-0104PS
24. Krukowski RA, Jaggi R, Cardel MI. Academic productivity differences by gender and child age in science, technology, Engineering, mathematics, and medicine faculty during the COVID-19 pandemic. *J Womens Health*. 2021;30(3):341–347. doi:10.1089/jwh.2020.8710
25. Alejandro LO, Kowalczyk M, Ham SA, et al. Differential professional and personal impacts of the COVID-19 pandemic on early career researchers. *Acad Med*. 2025. doi:10.1097/ACM.0000000000006005
26. Termini CM, Traver D. Impact of COVID-19 on early career scientists: an optimistic guide for the future. *BMC Biol*. 2020;18(1):95. doi:10.1186/s12915-020-00821-4
27. National Institutes of Health. Types of grant programs. Available from: https://grants.nih.gov/grants/funding/funding_program.htm. Accessed January 5, 2024
28. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101. doi:10.1191/1478088706qp063oa
29. Év L, Daniels K, EA A. *Evidence Synthesis for Health Policy and Systems: A Methods Guide*. World Health Organization; 2018. <http://www.ncbi.nlm.nih.gov/books/NBK569585/>. Accessed September 28, 2023.
30. Nature Editorial. Early-career researchers need fewer burdens and more support. *Nature*. 2016;538(7626):427. doi:10.1038/538427a
31. Bartels SJ, Lebowitz BD, Reynolds CF, et al. Programs for developing the pipeline of early-career geriatric mental health researchers: outcomes and implications for other fields. *Acad Med J Assoc Am Med Coll*. 2010;85(1):26–35. doi:10.1097/ACM.0b013e3181c482cb
32. Libby AM, Hosokawa PW, Fairclough DL, Prochazka AV, Jones PJ, Ginde AA. Grant success for early-career faculty in patient-oriented research: difference-in-differences evaluation of an interdisciplinary mentored research training program. *Acad Med*. 2016;91(12):1666. doi:10.1097/ACM.0000000000001263
33. Dickson KS, Glass JE, Barnett ML, Graham AK, Powell BJ, Stadnick NA. Value of peer mentoring for early career professional, research, and personal development: a case study of implementation scientists. *J Clin Transl Sci*. 2021;5(1):e112. doi:10.1017/cts.2021.776
34. Shen MR, Tzioumis E, Andersen E, et al. Impact of mentoring on academic career success for women in medicine: a systematic review. *Acad Med*. 2022;97(3):444–458. doi:10.1097/ACM.0000000000004563
35. Zambrana RE, Ray R, Espino MM, Castro C, Douthirt Cohen B, Eliason J. “Don’t leave us behind”: the importance of mentoring for underrepresented minority faculty. *Am Educ Res J*. 2015;52(1):40–72. doi:10.3102/0002831214563063
36. Allen TD, Eby LT, Poteet ML, Lentz E, Lima L. Career benefits associated with mentoring for protégée: a meta-analysis. *J Appl Psychol*. 2004;89(1):127–136. doi:10.1037/0021-9010.89.1.127

37. Feldman MD, Arean PA, Marshall SJ, Lovett M, O'Sullivan P. Does mentoring matter: results from a survey of faculty mentees at a large health sciences university. *Med Educ Online*. 2010;15. doi:10.3402/meo.v15i0.5063
38. Davis G. Improving the Postdoctoral Experience: an Empirical Approach. In: *Science and Engineering Careers in the United States: An Analysis of Markets and Employment*. University of Chicago Press; 2009:99–127.
39. Cavanaugh NA. Institutional Support, Programs, and Policies for Postdoctoral Training. In: *The Postdoc Landscape*. Elsevier. 2018:49–68. doi:10.1016/B978-0-12-813169-5.00003-3
40. Kotini-Shah P, Man B, Pabee R, et al. Work-life balance and productivity among academic faculty during the COVID-19 pandemic: a latent class analysis. *J Womens Health* 2002. 2022;31(3):321–330. doi:10.1089/jwh.2021.0277
41. Matulevicius SA, Kho KA, Reisch J, Yin H. Academic medicine faculty perceptions of work-life balance before and since the COVID-19 pandemic. *JAMA Netw Open*. 2021;4(6):e2113539. doi:10.1001/jamanetworkopen.2021.13539
42. Johnson RW, Weivoda MM. Current challenges for early career researchers in academic research careers: COVID-19 and beyond. *JBMR Plus*. 2021;5(10):e10540. doi:10.1002/jbm4.10540
43. Cook NL, Lauer MS. Biomedical research COVID-19 impact assessment: lessons learned and compelling needs. *NAM Perspect*. 2021;10.31478/202107e. doi:10.31478/202107e
44. Szczygiel LA, Jones RD, Drake AF, et al. Insights from an intervention to support early career faculty with extraprofessional caregiving responsibilities. *Womens Health Rep*. 2021;2(1):355–368. doi:10.1089/whr.2021.0018

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