ANNUAL REPORT

of the ACM Future of Computing Academy

September 2018

Submitted by the ACM Future of Computing Academy Executive Committee (Brent Hecht, Svitlana Volkova, Jeronimo Castrillon, Mirja Kühlewind, Jason Ernst)

Introduction

When ACM founded the ACM Future of Computing Academy last year, it did so with a powerful vision statement:

> *"The ACM Future of Computing Academy (ACM-FCA) is a new initiative created by ACM to support and foster the next generation of computing professionals. The Academy is a platform that enables the next generation of researchers, practitioners, educators and entrepreneurs to develop a coherent and influential voice that addresses challenging issues facing the field and society in general. The ACM-FCA will seek to harness collective action to define and launch new ACM initiatives that will carry us into the future. It is important to note that membership in the Academy is a commitment, not an award. Members of the Academy are expected to engage in activity for the benefit of the next generation of computing professionals. They have the privilege and responsibility to become the voice of the future of the computing field at large and of ACM specifically."*

In its first year, the ACM FCA Executive Committee (EC) has sought to **turn this vision into reality**. To do so, we have built the FCA into **a strategy-focused entity with significant operational capacity**. The FCA now contains a **series of task forces (organized into topic-focused working groups) that are empowered by a broader mission, strategic plan, and organizational infrastructure.**

In this document, we provide a summary of the activities of our task forces and the overall organization from our first year, as well as plans for the coming year. One useful lens with which to view our activities is the question: "*How has the ACM FCA benefited ACM?*" We have employed this frame below, discussing our work in terms of (1) shorter-term benefits for ACM, (2) longer-term benefits for ACM, (3) outstanding challenges, (4) channels of collaboration we have established ACM and ACM FCA, and (5) tabular data and background information.

Executive Summary

Shorter-Term Benefits for ACM from Year 1:

- We **stood up the FCA as an organization**: We transformed the ACM FCA from a group of people without existing practices, strategic goals, or social ties into a community with a well-defined mission and several initial successes that advance the mission.
- Improved recognition of ACM as a thought leader in our career cohort by starting a prominent discussion among early-career professionals about methods to mitigate the **negative societal impacts of computing advances**. This discussion was **covered by**

Nature and other outlets and gave us an opportunity to discuss related initiatives like ACM's new Code of Ethics.

- We helped ACM establish a footprint in **podcasting** by developing the capability to produce professional podcasts and launching our first podcast.
- We provided **existing ACM initiatives** with input from early-career professionals through partnerships on the ACM Publications Board, work with ACM Ubiquity, and others.
- We have several other initiatives that are approaching launch, including an exciting project that we hope will **start a field-wide discussion** around open-source software and data licenses and a podcast that will feature **interviews with authors of award-winning papers at ACM conferences.**

Longer-Term Benefits for ACM from Year 1:

- We **gained buy-in for ACM among leaders in our cohort**: We designed the FCA such that, through working on FCA initiatives, our members become convinced of the **power of collective action through a professional society** and gain experience with the benefits, joys, and meaningful sacrifice of doing so.
- Actioning a key aspect of ACM's vision for the FCA, we have made significant progress establishing the culture and capability to make FCA **an initiative incubator that can "define and launch new ACM initiatives that will carry [ACM] into the future."**

Challenges:

- **"Commitment not an award" is not sufficient**: Nearly all early-career professionals are told "wait to do service work until tenure" and the equivalent in industry. This advice reflects the increasingly intense incentives to stand-out in our all-or-nothing **superstar economy**, and many of our members are forced to execute "all nighters" at least once a month just to stay afloat in their "day jobs". As such, we have learned that the "commitment not an award" phrasing in the FCA vision statement has been an insufficient incentive for our members to be able to allocate sufficient time to the FCA. The FCA EC is working hard on mechanisms to bend the incentive structures of our members, and we can use any help ACM can provide.
- **Integrating existing initiatives and new ideas:** An obvious challenge for an "initiative incubator" like the ACM FCA is communication and collaboration with leaders on existing ACM initiatives. We are working on ways to widen outward facing communication channels, and we have a few ideas for ways ACM can do the same.

Channels of Collaboration:

- We include a list of ways that ACM leadership can stay abreast with the ACM FCA EC and its members, e.g. participating in our weekly EC meetings, joining us on Slack, reading our newsletter.

Shorter-Term Benefits for ACM from Year 1

(1) Benefit: Improved recognition of ACM as a thought leader within our cohort

In our first year, we have seen success (1) raising awareness of ACM among our cohort and (2) associating ACM with thought leadership on challenges that are of deep concern to members of cohort.

A primary example of both of these contributions is the work of the FCA Negative Impacts Task Force. This task force published a detailed proposal (link) for a mechanism to mitigate the negative societal impacts of computing advances (e.g. threats to democracy, automation-induced unemployment) through a moderate change to the peer review process. This proposal received substantial organic attention in the computing field, particularly among younger professionals concerned about the direction and public perception of the careers they have chosen. This attention was then magnified substantially when **our proposal was covered by *Nature*** (link) and other outlets (e.g. Axios [link])**,** coverage that began when *Nature* reached out to ACM to facilitate an interview. *Nature* informed us that the post about the FCA proposal did "very well", remaining one of the top three posts on the site for days after it was published. Equally exciting for the members of the task force was the conversation that took place around the *Nature* article in communities frequented by early career scholars and practitioners. In particular, **the proposal was discussed in a very-high-engagement thread on *Hacker News*** (link), a well-known discussion forum among members of early-career professionals, especially practitioners (it is hosted by Y Combinator). At one point, the proposal was at or near the top of *Hacker News*, which is quite the accomplishment among our cohort. More importantly, it is clear from the *Hacker News* thread the FCA proposal helped many in our cohort engage with the societal impacts of their work for the first time, and it is thrilling that this horizon broadening was catalyzed by ACM. More generally, we were excited that in our first year, the negative impacts proposal was able to manifest the ACM vision for the FCA to develop a "coherent and influential voice that addresses challenging issues facing the field and society in general". In doing so, **we helped demonstrate that ACM is not "only" an organization that hosts conferences and the DL, but also one that will help the computing community address its toughest issues and lead it towards a better future.**

We also had additional successes on this front, each of which has a trajectory towards major impact in the coming year or two. In particular, our podcasting task force led by FCA Member Andrew Miller quickly **stood up our capacity to produce high-quality podcasts**, with podcasts being a very popular medium in our cohort of computing professionals. We **launched our first podcast in January** – "Computing Across Disciplines" (link) – which has produced five episodes, all featuring interviews with well-known senior interdisciplinary scholars (including ACM President Cherri Pancake) .

In the next year, we have a number of plans that should offer similar benefits for ACM by **placing ACM at the center of high-visibility initiatives that address issues of particular interest to the younger cohort of computing professionals**. For instance, based on the success of their proposal, the Negative Impacts Task Force has **acquired seed funding from the National Science Foundation ($50K) to host a prominent workshop on mitigating the negative impacts of computing** through structural changes to the research process. The workshop will invite both senior leaders of the field (including the leaders of ACM) and promising early-career scholars and will aim to produce recommendations. Our podcasting task force is working on **a second podcast that will feature regular interviews with authors of award-winning papers at ACM conferences.** Additionally, the Equitable Computing task force will soon launch their **Responsible AI License (RAIL)**, on which they have been collaborating with a pro-bono IP lawyer. The goal of this license is to afford most of the benefits of open-source licenses, while at the same time preventing certain uses of the software or data (e.g. detecting protected identity characteristics, use in autonomous drones).

(2) Benefit: Providing early-career perspectives for existing ACM initiatives

One area in which FCA has been able to support ACM in the short-term in the year since we launched is by **working with ACM leaders on ACM's existing initiatives**. Collaborating with Peter Denning, FCA Member Bushra Anjum (Amazon) is leading a task force that will **integrate FCA into the leadership of *ACM Ubiquity***. Julie Williamson (Uni. Glasgow) is an **active member of the ACM Publications Board**, and the FCA Publications Task Force has been collaborating with the Publications Board on their initiatives on **conflict of interest policy and reviewer incentivization**. Furthermore, FCA Member Andrew Miller has **elevated ACM leaders** (e.g. Cherri Pancake) and their work through the Computing Across Disciplines podcast. Additionally, our Emerging Topics in Computing task force is seeking to bootstrap EIGs in new areas that are led by early-career scholars.

Many of our initiatives described above and below were **the result of consultations with leaders in ACM**, e.g. former CACM editor Moshe Vardi spent several hours mentoring the Negative Impacts Task Force on their proposal and ACM Code of Ethics leader Marty Wolf has consulted with the Equitable Computing Task Force on their license.

We were also able to leverage synergies with FCA Chair Brent Hecht's role on the executive steering committee of the [FAT* conference](#), the leading publication venue in the growing research area known as algorithmic bias. After an impartial search and negotiations with ACM, **FAT* decided to affiliate with ACM**. Through this process, Hecht **helped ACM develop better communication strategies and materials to articulate its benefits for start-up independent research communities led by members of our cohort.**

(3) Benefit: Operationalizing ACM's vision for the FCA

In our first year, **the EC has transformed the FCA from a group of people without existing practices, strategic goals, or social ties into a community with a well-defined mission and a few major successes to advance that mission**.

This has involved extensive behind-the-scenes efforts by the FCA executive committee and many of its members. As FCA Chair Brent Hecht presented to ACM in October [link to slides], the first step in our institution-building efforts was a detailed strategic planning process whose goal was to operationalize the founding vision of the FCA. This process resulted in a **mission statement and four strategic goals**.

Our mission statement is:

"The mission of the FCA is to substantially improve (1) computing, (2) the computing community, and (3) computing's relationship with society."

Our four strategic goals for the first two years are as follows:

1. In line with ACM's vision for FCA to "define and launch new ACM initiatives that will carry us into the future", we should have several major and positive successes, e.g. touching at least 1M people and/or half the ACM).
2. We should establish effective procedures and culture.
3. We should substantially grow the prominence of the FCA.
4. We should have good baseline performance by all members and groups.

In line with our second strategic goal, the FCA has also developed a series of regular institutional practices. **The executive committee meets on a weekly basis** (Tuesdays). Our working groups meet approximately every other month, with their constituent task forces employing agile techniques that usually involve meeting much more frequently. After our first year, our members strongly requested shifting to more agile week-to-week practices that avoid work deadlocks due to multi-continent meeting scheduling, with a**gile approaches quite typical of the working practices in our cohort**.

The FCA EC and Meetings Chairs Luigi di Rossis and Bushra Anjum also executed a **very successful two-day second annual meeting** in Torino, Italy (the first meeting we organized ourselves). Many of the materials from this meeting are available to ACM leadership in the FCA's Google Drive repository. We have additionally locked down the details for our third annual meeting, which will be held at MIT next June. As noted below, we hope that some ACM leaders can join us!

Finally, we are hard at work at **launching our second recruiting cycle**, the first we have run ourselves. This is a recruiting cycle with two major objectives: (1) address the diversity concerns that were the result of the first process and (2) evaluate new members for their ability to simultaneously sustain individual excellence while at the same time engaging in successful community leadership. **With respect to the diversity concerns, we have identified a large number of dimensions in which we want to improve upon the ACM FCA's diversity**, including: area of interest (e.g. SIGs), country of origin, race, gender, ethnicity, gender, age, ability, non-visible ability, academia/corporation/start-up, hardware/software, and many others. With respect to the second concern, we have added some questions to the application and evaluation rubric that should help us assess this property in detail.

Longer-Term Benefits for ACM from Year 1

While our short term successes above have been significant for the first year of operations, we believe the work we have done towards longer-term benefits for ACM may be even more important. These longer-term benefits are described below.

(1) Benefit: Gaining buy-in for ACM among leaders in our cohort

As FCA Chair Brent Hecht has discussed with ACM leadership, perceptions of ACM among early-career professionals are not ideal. To (very) broadly generalize, it is the observation of the EC that most people in our cohort have a transactional relationship with ACM: they appreciate the specific events from which they benefit, but they largely do not see the ACM an institution in which they are willing to making long-term investments, especially given their extremely limited time resources. A primary cause for this is that, for a variety of reasons, members of our cohort largely do not view ACM as means of solving the growing list of challenges in our field and in our field's relationship with society.

The good news is that early-career professionals *do* believe in the core purpose of ACM – to facilitate collective action to address our field's challenges – and believe in this intensely. In fact, a key part of the identity of our cohort is concern about the increasingly large collective problems in our field (e.g. diversity, negative effects of automation, algorithmic bias), as well as a deep frustration associated with not being able to address them.

It is clear that there is a tremendous arbitrage opportunity in the gap between perceptions of ACM and the reality of ACM as a means of achieving a key goal in our cohort. We have constituted the ACM FCA – from its mission to its strategic goals to its operations – to attempt to take advantage of this arbitrage opportunity. Specifically, we designed the FCA to highlight the potential of professional societies – and ACM specifically – to address the collective problems in the field that cause deep concern in our cohort. Through actioning our strategic plan, our members will learn about importance, benefits and joys – as well as the necessary challenges and sacrifices – of leading collective action efforts to address

key problems in our field using the mechanisms of ACM. Our hope is that our members will gain the education and experience necessary to be leaders of our cohort through ACM in the future.

A useful articulation of this vision can also be found in the **ACM FCA chair's speech to open the second annual meeting of the ACM FCA**. We encourage readers interested in how we are motivating our members to be leaders in the field through ACM in this short speech: https://acm-fca.org/2018/07/18/fca-chair-brent-hechts-opening-speech-fca-2018-annual-meeting

(2) Benefit: Defining and launching transformative new initiatives

A key part of the visioning statement for the FCA was to "harness collective action to **define and launch new ACM initiatives that will carry us into the future**". In just its first year, the FCA was able to push the boundaries of ACM's existing activities through a few beta initiatives. For example,

- Through our proposal about mitigating the negative impacts of computing, we became a "coherent and influential voice that addresses challenging issues facing the field and society in general". No comparable voice exists for early-career professionals in computing, and we are excited about further developing and utilizing this voice.
- We advanced a vision of radical interdisciplinarity through workshops that, for instance, featured the voices of chefs and food industry experts as co-equal to voices from the computing industry [link].
- We are expanding the media in which ACM has an impact, e.g. we stood up professional-sounding podcasting.
- We are working on a potentially transformative software license (see above) that can serve to action some of the principles in the ACM Code of Ethics.

Moving forward, **the FCA has tremendous potential to become ACM's "initiative incubator"**: an institution that lets early-career professionals understand the benefits of leadership within ACM while at the same time helping ACM expand into initiatives of most interest to early-career professionals.

Outstanding Challenges

(1) Challenge: Creating time for FCA activities

As FCA Chair Hecht discussed with ACM in October 2017 [link to slides], by far the most significant challenge facing the FCA is that none of our members have the time resources to make the FCA maximally effective. Pre-tenure faculty are told by their mentors to "avoid service work until tenure", and the situation is similar or worse in industry and especially at start-ups. Immediately upon formation, the EC recognized that communicating that FCA membership is a "commitment not an award" was far from sufficient to counteract the enormous incentives that make "avoid service work until tenure" effective advice.

More so than in previous generations, our cohort faces tremendous work demands thanks primarily to three forces: (1) the "superstar economy", (2) always-on work practices, and (3) young families in dual-career households. For context, it is not atypical for our members to "pull all-nighters" at least once a month so that they can succeed sufficiently in their "day jobs" to stay afloat in the superstar economy (while taking care of their families). This leaves little time - or creative energy - for volunteer community leadership.

The FCA EC has been working hard to identify strategies to help our members create time for FCA activities (see our slides from our "Incentivizing FCA Work" plenary from our second annual meeting for an overview). Based on feedback from our members, we have implemented a publicity plan to ensure that FCA work gets maximum visibility from audiences within our members' incentive structures, a particular concern of our members from industry. Working with former ACM President Vicki Hanson, we sent letters to chairs and hiring committees on behalf of our members. We are also seeking to attract members of our next recruiting class that have extensive experience balancing individual achievement and community leadership or that have a significant buffer of individual achievement that they can take on more community leadership.

Moving forward, as Hecht described at the meeting in October 2017, we could use any assistance ACM can provide to help us address this issue. We're open to any and all creative ideas!

(2) Challenge: Integrating existing ACM initiatives and new ideas

An obvious challenge for an "initiative incubator" like the ACM FCA is communication and collaboration with leaders on existing ACM initiatives. Finding mechanisms to do this well is absolutely essential to the success of the FCA; it will avoid wheel reinvention, diminish duplication of effort, enable the FCA to benefit from years of expertise in many cases, and build constituencies around novel FCA initiatives.

In a process manifest in our lightweight task force initiation form, FCA members are all supposed to fully research existing related ACM activities and reach out to leaders of these activities prior to proposing to start a new task force. This has led to some successful collaborations in our first year:

- One of our members is leading a task force to integrate some of our activities with *ACM Ubiquity*.
- The Negative Impacts Task Force collaborated with former CACM Editor Moshe Vardi on their proposal.
- One of our members sits on the ACM Publications Board.
- The Equitable Computing Task Force synced up with Marty Wolf, who provided critical input to their license initiative.

However, this process has been imperfect and we have seen one or two cases in which an FCA member begins working on an initiative only to find out that ACM already has something similar in development. As our members learn more about ACM - a process we are seeking to accelerate (see below) - we expect this will grow increasingly rare.

We also have seen cases in which ongoing ACM FCA initiatives hit a bit of a roadblock when FCA members reached out to collaborate more closely with ACM (often at the FCA EC's urging). Examples include a ready-to-publish statement on visas for Chinese Ph.D. students in the United States that was not published, a proposal for a journal for undergraduate research by two FCA members that are at teaching-focused institutions who saw a need for such a journal, a proposal for a new Interdisciplinary Prize, an initiative associated with expedited senior membership for particularly active early-career scholars, and others. The FCA EC has been in touch with ACM leadership about each of these situations and has learned about and understands the obstacles for "ACM Central". However, each of these situations has presented non-trivial challenges to FCA morale, especially given the above concerns about work/life balance, and the FCA EC can only do so much to mitigate these morale costs. The FCA EC is working with ACM leadership to prevent these situations in the future, e.g. by (1) better facilitating early communication (see below) and (2) helping FCA members learn more about ACM and vice versa. As the FCA Chair has discussed with ACM leadership, we also recommend a "Getting to yes" approach on the ACM side. The vision for the FCA means that if the FCA is doing its job, it should be pushing ACM's traditional boundaries into new directions. The challenge is making sure we can channel all of ACM's expertise and resources to ensure that this boundary pushing is maximally beneficial for ACM and involves minimal risk.

Collaboration Channels

In line with our goals above, ACM FCA would like to ensure open and effective bottom up collaboration with the ACM leadership. We invite all ACM leaders to join us in the following collaboration channels:

1. **Regular emails:** On or around the 1st of every month EC will send an email to the ACM leadership summarising in "plain language":
    a. previous month's efforts and results;
    b. outline whether FCA team is on track with task forces and other efforts e.g., recruiting, annual meeting preparation;
    c. identify any problems or issues;
    d. address tasks and efforts planned for the next month.

2. **Newsletter** (approx. every two months): ACM FCA executive committee will share the FCA newsletter that highlights recent individual accomplishments and group contributions.

3. **EC weekly meetings:** EC meets nearly every week on Tuesdays at noon EST. Zoom link: https://zoom.us/j/3040021983. As always, ACM leadership team is welcome to join anytime.

4. **Slack channels:** FCA internal communications are done on Slack. We have Slack channels for the task forces a few extra devoted to separate efforts e.g., website, social media, recruitments, podcast. ACM leadership team is welcome to join any channels, although we recommend discussing with the relevant members first before joining the non-FCA-wide channels.

5. **Shared folder:** FCA EC maintains a shared folder with all materials relevant to the FCA. As always, ACM leadership team has access to these materials.

6. **Annual report:** Every year FCA EC will prepare and send to the ACM leadership an annual report that covers ACM FCA activities for the past year.

7. **Annual meeting:** FCA will host an in-person meeting in the summer each year. As was the case last year, ACM leadership will be invited.

BASIC INFORMATION

FCA Executive Committee Members

	ACM FCA Board	Affiliation / Sphere
Chair	Brent Hecht	Northwestern
Vice-Chair	Svitlana Volkova	Pacific Northwest National Laboratory
Treasurer	Jeronimo Castrillon	TU Dresden
Members	Mirja Kühlewind	ETH Zurich
	Jason Ernst	RightMesh / Guelph

Working Groups
The goal of each working group, the list of committee names are listed below.

The Future of Publishing working group has three goals: 1) develop an evidence based understanding of current best practices in publishing across computing science; 2) re-imagine a publishing and dissemination culture that exemplifies the values of open access, open data, and rigour; 3) advocate for change in publishing practice based on empirical evidence and ethical values.

	Future of Publishing	Affiliation / Sphere
Chair	Julie Williamson	University of Glasgow
Members	Luigi De Russis	Politecnico de Torino
	Mirja Kühlewind	ETH Zurich
	Sarah Clinch	University of Manchester
	Wouter Koolen	Centrum Wiskunde & Informatica

The goals of the Equitable Computing and AI group are to raise awareness of how AI could impact equality, to proactively facilitate conversation, to research the challenges that currently exist or may develop, and to be thought-leaders on solutions and the standards that practitioners should uphold. The overarching aim is to maximize the benefit and opportunity offered by computing to all and to ensure fairness, representation, explainability, and reproducibility of methods.

	Equitable Computing & AI	Affiliation / Sphere
Chair	Julia Haines	Google
Co-Chair	Danish Contractor	IBM
Members	Daniel McDuff	MIT Media Lab

The Future of Work group aims to understand and address the effects of technology on the workforce from the perspective of the computing community. We will also track the public perception of these effects and seek to be a constructive participant in this important conversation

	Future of Work	**Affiliation / Sphere**
Chair	Lauren Wilcox	Georgia Tech
Co-Chair	Jeffrey Bingham	CMU
Members	Brent Hecht	Northwestern
	Ehsan Hoque	Rochester
	Jason Ernst	RightMesh / Guelph
	Svitlana Volkova	Pacific Northwest National Laboratory
	Yonatan Bisk	University of Washington
	Johannes Schoening	University of Bremen

The Interdisciplinary working group has four goals: 1) Develop a solid evidence body to develop understanding of, and motivate, interdisciplinary research both within computer science disciplines and between computer science and those from other domains. 2) Shape perceptions and increase awareness of interdisciplinary research in computing. 3) Communicate computational approaches across other fields — such as biology, medicine, physics, material science, and economics — and within subareas of computer science. 4) Facilitate the sharing and reuse of insights from multiple areas to solve the hardest outstanding problems in science and engineering.

	Interdisciplinary	**Affiliation / Sphere**
Chair	Cathy Wu	Berkeley
Co-Chair	Andrew Miller	IUPUI
Members	Bushra Anjum	Amazon
	Jeronimo Castrillon	TU Dresden
	Linh Thi Xuan Phan	UPenn
	Lydia Chilton	Columbia
	Pamela Wisniewski	University of Central Florida
	Sarah Clinch	University of Manchester
	Tim Baarslag	Centrum Wiskunde & Informatica
	Oren Sar Shalom	IBM

The goal of the Co-Creation group is to highlight and connect such fundamental issues with research in computing, to ensure technologies are designed and built to produce a better society.

	Co-Creation	Affiliation / Sphere
Co-Chair	Naja L. Holten Møller	Copenhagen University
Co-Chair	Marianna Obrist	University of Sussex
Members	Sunyoung Park	University of Michigan
	Julia Haines	Google
	Luigi De Russis	Politecnico de Torino
	Jason Ernst	RightMesh / Guelph

The goal of Education and Outreach is to provide resources that cover as much of the space as possible in computer science (CS) education and outreach to a variety of age groups and audiences while borrowing and integrating between projects to ensure compatibility, efficient use of resources, and coverage.

	Education & Outreach	Affiliation / Sphere
Co-Chair	Indrajit Roy	Google
Co-Chair	Lana Yarosh	University of Minnesota
Members	Bushra Anjum	Amazon
	Justin Solomon	MIT
	Katie Schuman	Oak Ridge National Lab
	Rajan Vaish	Stanford
	Shipra Agrawal	Columbia
	Tim Weninger	University of Notre Dame
	Yonatan Bisk	University of Washington

The expectations placed on early career academics and practitioners are increasingly demanding, placing unreasonable pressure on those in the early stages of their career if they want to succeed. The Fostering the Future of Computing working group addresses the broad goal of: supporting CS researchers and practitioners from diverse backgrounds in the early stages of their career.

	Fostering Future of Computing	Affiliation / Sphere
Chair	Sarah Clinch	University of Manchester
Co-Chair	Pamela Wisniewski	University of Central Florida
Members	Bushra Anjum	Amazon
	Christine Bassem	Wellesley College

	Mirja Kühlewind	ETH Zurich
	Neha Kumar	Georgia Tech
	Wu Liu	Beijing University of Posts and Telecommunications
	Yousra Aafer	Purdue

Task Forces

As discussed above, task forces were formed as a way to focus the working groups into delivering and executing faster and to focus on short term deliverables. The working groups were brainstormed for the most part during the initial FCA meeting at the start of our terms under the guidance of the ACM members who established the ACM. A few new working groups also formed organically throughout the last year. The task forces are organized within the working groups, and each working group may have multiple task forces. The task forces are often made up of fewer people (2-3) than the working group (working groups may consist of up to 9-10 members) and are formed with a limited scope on one task for a well defined time frame (typically 3-12 months).

RADLife: Working Group (WG): Future of Computing
Reimagining Academic Daily Life -- This task force would have two goals. First, we plan to illuminate different possible futures for underrepresented minorities, using illustrations. Second, we plan to illustrate scenarios that frequently leave students and faculty feeling challenged. Ideally, this would take place in an online community (but also in other fora).
Lead: Neha Kumar & Lauren Wilcox
Additional members: Christine Bassem, Pam Wisniewski
Main outcome: Illustrations and community/fora
Duration: 12 months

ML-Unplugged: WG: Education and Outreach
Creation, testing, and distribution of outreach materials suitable for middle and high school girls (or middle and high schoolers in general) on machine learning, including presentations, hands-on demos, an unplugged activity, and coding exercises.
Lead: Katie Schuman
Additional members: Lana Yarosh, Indrajit Roy
Main outcome: Teaching material on ML
Duration: 3 months

Negative Broader Impacts: WG: Future of Work

Pursuing changes to peer review and research on negative broader impacts, through online discussions and in-person workshops

Lead: Lauren Wilcox, Brent Hecht
Additional members: Yonatan Bisk, Johannes Schoening, Ehsan Hoque
Main outcome: Workshops (NSF, CCC) and continued community discussion

Duration: 12 months

Interdisciplinary Research Prize: WG: Interdisciplinary

This Task Force seeks to first provide a taxonomy of the IDR lifecycle, challenges and existing support thereof, and highlight concrete historical examples from computing. The first outcome of this Task Force will be a recommendation on the future discourse of IDR, which is the first step towards shifting the discourse and eventually perception of IDR; this will be in the form of a blog post, white paper, infographic, or similar.

With the challenges and taxonomy in mind, the second goal of this Task Force is to scope a research excellence award with the goals of establishing a high-prestige award that, a) can be sustainably implemented, b) for which it is tractable to evaluate excellence, and c) addresses critical challenges of conducting IDR. The eventual goal is for this prize (10 years) to be recognized by a majority of the research communities in computing (FCA Objective #1).

Lead: Cathy Wu
Additional members: Jeronimo Castrillon, Lydia Chilton
Main outcome: FCA statement and taxonomy of IDR for positioning of an IDR prize
Duration: 8 months

Undergraduate Journal of Computing: WG: Future of Computing

In an effort to support undergraduate research, we aim to start an ACM journal of computing for undergraduate research. Existing journals for undergraduate research are either for general STEM fields or are reviewed by students, which makes them of low value to students and their advisors. The goal of this task force is to provide incentives for students and advisors alike to perform undergraduate research, by providing a high quality venue of publication, with a specific focus on computing research.

Lead: Christine Bassem and Anand Seetharam
Additional members: Luigi De Russis, Indrajit Roy
Main outcome: Definition of an ACM journal for undergrad research

Duration: 6 months

Future of Work in Context of PAI: WG: Future of Work

We propose to prepare a living document on example cases and studies on how recent advancements in AI influence jobs and nature of work. The end goal is to study the current status of the problem and understand best paths forward. In ~3 months, we hope to transition the living document into a timeline of important events relevant to this problem and incorporate our findings into a publishable document and a blog post. Then, we plan to use a similar approach to study other issues relevant to emergent AI technologies e.g., issues along the lines of Fair, Transparent, and Accountable AI, and Collaborations Between People and AI Systems (https://www.partnershiponai.org/about/#pillar-3)

Lead: Svitlana Volkova; Ece Kamar
Additional members: Yonatan Bisk
Main outcome: Document on AI influence on jobs and timeline for measures
Duration: 15 months

Computing on future emerging technologies: Ramp-up

We are in a very exciting time for computing, with many new technologies being proposed to build systems beyond traditional CMOS-based Von Neumann architectures. This development will impact the underlying fabric of the Future of Computing and as such the FCA should become a voice in it, for the ACM and for the computing community as a whole. Concrete actions of this initial TF are (i) identify major players (e.g., IEEE Rebooting computing, Quantum computing at IBM/MS.Google), initiatives (e.g., recently funded DARPA projects and flagship projects in EU and Asia), and ACM structures (e.g., newly founded ACM JETC), (ii) Develop a strategy to leverage existing networks to multiply the impact of an FCA initiative in this field, and (iii) develop a comprehensive list of technologies, e.g., neuromorphic (memristors, spin, etc.), quantum computing (adiabatic, superconducting, etc.), new materials (Graphene, Carbon, Magnetic effects for memories), etc. The outcomes of this TF will be (i) a roadmap for the WG on emerging topics in computing (follow-up task forces), (ii) the beginning of a living document with a glossary of terms and simple explanations ("for dummies") with reach links about the emerging technologies identified (to scale up, Jeronimo and Katie would reach out to experts that contribute with descriptions, sketches, and/or animations), and (iii) identified ACM conferences for a workshop or special session and organize it.

Lead: Jeronimo Castrillon and Catherine Schuman
Additional members: Oren Sar Shalom
Main outcome: Initial version of glossary on emerging technologies
Duration: 6 months

PaperADay: Interdisciplinary

Will produce a podcast and associated materials (blog, twitter) to support researchers and practitioners in gaining a broader awareness of the discipline. The aim is to provide a go-to resource for students and others interested in understanding the breadth of computing topics. Aiming for podcast launch (i.e. released episodes) in early 2019. One podcast episode per month, initially for 8 months and then ongoing if considered successful at review date (end Aug).

Lead: Sarah Clinch, Andrew Miller
Additional members: None
Main outcome: 8 paper podcasts
Duration: 12 months

Innovation Leaders @ Ubiquity

Ubiquity is ACM's online publication devoted to the future of computing and the people who are creating it. We are proposing working closely and directly with Peter Denning , cheif editor of Ubiquity and start a new section of Ubiquity called "Innovation Leaders". This section of Ubiquity will consist of interviews of young professionals, who comment on their concerns about the future of computing and their ambitions to shape the future through their leadership. Starting November, I plan to publish one new profile every two weeks (similar to People of ACM profiles) as part of the series "Innovation Leaders" where a majority of the interviews will be of ACM FCA members.

Lead: Bushra Anjum
Additional members: Svitlana Volkova
Main outcome: Around 10 interviews
Duration: 6 months

Computing and the future of indigenous communities

The Co-creation group has previously hosted two co-creation events which covered the intersection of computing and health, and the intersection of computing and food. The third event in this installed is proposed to be at the intersection of computing, food, health and indigenous issues. This event is inspired by the work Jason has been doing in the community of Rigolet where he is working with the southernmost Inuit community in the world. Due to the geography, this community is experiencing climate change faster than most places resulting in changing wildlife patterns, and the growth of berries and other local plants. The community is experiencing mental health issues due to the changes this is causing. The community decided to start documenting their experience and collect data as evidence that this change is occuring with the eNuk app which has technical challenges due to the lack of cellular coverage in the Canadian North. The eNuk app will be used as a case study on how indigenous communities can partner with researchers from computing, public health and food security in ways that are respectful, and refrain from colonization techniques present in other research. The event will follow the previous events where researchers, community members and other interested parties are invited to attend and contribute to discussion that will lead to a manifesto on how best to

include indigenous communities in a way that is not colonial, to include indigenous data, and methods, and to involve all stakeholders while using computer science to solve complex issues affecting these people. The task force will focus on identifying potential conferences to co-host with, proposing the workshop, inviting and supporting interested parties to attend and hosting the event.

Lead: Jason Ernst
Additional members: Luigi De Russis (and members of the co-creation WG)
Main outcome: Co-creation event
Duration: 7 months

Use of Funds

At the beginning of the fiscal year, we were provided with $150,000 USD. Around $110,000 USD was left remaining at the end of the year. We expect the following fiscal year to increase in costs due to the growing intake of ACM FCA members, and have budgeted extra money to increase the number of in person meetings for FCA members in working groups and task forces after feedback from members that this would increase productivity of the groups. More members are expected to join existing ACM initiatives so the cost of traveling to meet with these groups is also expected to rise.

Project	Responsible people	Working group	Status	Funds Spent (Raised)
Computing across disciplines podcasts	Andrew Miller	Interdisciplinary	Ongoing	$800 USD
Negative impacts blog post	Lauren Wilcox, Brent Hecht	Future of Computing	Done	$50,000 USD
Next generation of electronic health records workshop	Naja L. Holten Møller, Marianna Obrist	Co-creation	Done	Unknown

[Future of computing and food workshop](#)	Naja L. Holten Møller, Marianna Obrist	Co-creation	Done	$1,500 EU
Responsible AI License	Julia Haines, Danish Contractor, Daniel McDuff	Equitable Computing	Ongoing	Pro-bono Legal Advice and License created
FCA Annual Meeting	ACM Exec, Luigi, Bushra	n/a	Done	$29,000 USD
FCA Attending ACM General Meeting	Jason, Jeronimo, Svitlana	n/a	Done	$4,500 USD
ACM FCA Website	ACM Exec	n/a	Done	$2500 USD

Total Spent: $38,300 USD
Total Raised: $50,000 USD