

Vision 2020:
Charting A Course for Academic Computing at Wake Forest

May 2014

INTRODUCTION

When, in 1995, Wake Forest ratified the Plan for the Class of 2000, which included an ambitious computing initiative that would become the envy of colleges and universities worldwide, it would have been difficult to imagine the changes in higher education that would be wrought by information technology in the ensuing two decades. The establishment of a ubiquitous computing environment at Wake Forest in 1996 was presaged a mere two years earlier with the introduction of the World Wide Web. Mobile computing was nascent, with mass adoption of smart phones, cloud computing, and a myriad of other technologies many years in the future.

For nearly twenty years, our vibrant learning community not only has held close to our founding commitment to exceptionally high quality education and scholarship, but also to meaningfully leveraging a myriad of tools and techniques made possible by the remarkable potential wrought by advances in information technology. The Plan for the Class of 2000 ushered in a period of unprecedented pedagogical innovation at Wake Forest, unlike anything that had come before. Dividends from those activities accrue even now, as faculty members apply hard-won lessons from their efforts many years ago. There were also early forays into the establishment of online journals. More broadly, as an organization we developed a deep and still relevant understanding of how to move an organization forward in its IT initiatives. The team supporting academic computing at Wake Forest is well prepared for the change management initiatives that necessarily must accompany the significant IT investments aimed at positively impacting the teaching, learning, research, and creative production environment at Wake Forest. This in-house expertise must not be underestimated; it is a potent resource as we contemplate reinvigorating our commitment to exploring the potential of both established and emerging technologies.

While we have retained our organizational ability to deploy, support, and leverage IT investments, we also have wavered from our focus on building currency amongst our faculty with regard to the power and peril of IT in the teaching and learning enterprise, as well as emergent models for open access for scholarly work. One might observe that we retain our potential, but have, to some degree, lost our edge. As is discussed directly, for reasons having to do with both opportunities and threats, we must reengage our community with the rapidly advancing domain that is to be found at the intersection of changing student characteristics, rapidly evolving IT, and evidence-driven pedagogical techniques and strategies. This we have done very successfully before, and to this we must recommit ourselves institutionally. We must also recognize the sea change that is occurring at the intersection of academic scholarship and new models of distribution and sharing of knowledge.

If we are to rise to meet the challenges and seize the opportunities presented by a rapidly evolving technology landscape, we must respond equally to the attendant technical and *non*-technical imperatives. Specifically, change management efforts will be required to fully realize the opportunities with which we are presented, as will be a commitment to evolving our

instructional and social spaces to reflect new modes of working and collaborating; technology and space design rapidly are becoming inseparable in educational settings.

In some ways, the opportunity to seize upon IT-based opportunities is more daunting than it was in 1995. Unlike two decades ago, the basis of distinction is not driven or enabled by a single computing device. Indeed, it is precisely the *absence* of standardized computing devices that characterizes our current environment. In a world replete with low-cost bandwidth, ready access to exponentially expanding data repositories, and a generally IT-savvy populace, distinctiveness and impact is found in our shared understanding and pursuit of the promise of technology to empower, engage, and enable a wonderfully diverse array of individuals, groups and organizations committed to the *pro humanitate* ideal. We envision a Wake Forest rooted in its values and ideals as it moves confidently into a rapidly evolving educational and technical landscape.

VISION

Our vision is to be an exemplar for a new kind of premier learning experience, valued not only for the close personal relationships held between our students and their instructors, but also for the innovative learning environment afforded by our distinctive use of information technology in our teaching, learning, scholarly, and creative pursuits.¹ Our students, our faculty, and our staff demonstrate the power of new modes of working, of learning, of collaborating, of sharing, and of contributing. We will be a crucible for exploring what works – and what does *not* work – at important intersections...intersections between technology and learning, between technology and discovery, and between technology and community. We will share our learning broadly, and will remain ever open to learning from others. We will broaden our notion of what it means to be an institution of higher learning in an increasingly global community, and energetically pursue new ways of contributing to the greater good of that entire community. For this, we will be recognized as a leading example of how best to combine the merits of traditional liberal arts education with the power of technology at the undergraduate level, while also demonstrating prowess in the use of IT-based pedagogies in graduate and professional education.

In pursuit of this vision, we will hold firm several core values:

- We are personal. We believe in the power of close personal relationships to drive change, and we recognize that these relationships are just as likely to be facilitated by technology as not. Even as we broaden our notion of community, we will never dilute it.

¹ For our undergraduate students, we conceive of primarily a *residential* learning experience. Most of our graduate students reside off-campus and are at a different life stage, pointing to a somewhat different type of IT-enabled learning experience.

- We are outcome-oriented. As an institution of higher learning, we are evidence-based in our assessment of technology initiatives. We expect improved learning outcomes, scholarship with higher visibility and impact, and more compelling creative production as a result of our technology investments – and we hold ourselves responsible to demonstrate those benefits.
- We embrace experimentation. We embrace exploration and innovation as vital activities in advancing our understanding of the leveraging effects of IT. While we learn from the experiences of others, we also explore uncharted territory, learning from both our successes and our failures, which we collectively own. In our IT-related pursuits, we think in terms of our community as a whole, sharing broadly our lessons learned.
- We are agile. The rate of change of technology is increasing, bringing with it both promise and peril. We move forward confidently, believing that the life cycles of IT-based innovations are becoming shorter, requiring us to move more quickly to capture their value.

ENVIRONMENTAL SCAN

Higher education is experiencing unprecedented challenges. Cost structures are driving tuition figures to levels that are drawing national attention and, at times, ire. Debates unfurl in the popular press regarding the value of higher education and, more instrumentally, college degrees. Simultaneously, traditional colleges and universities are seeking new revenue streams to shore up their increasingly tenuous business model, often aggressively introducing an array of online offerings. Ironically, the same IT that represents opportunities for dramatically enhancing the higher education experience also presents one of its more formidable threats: purely online educational offerings that circumvent the traditional college or university model. MOOCs offered by established higher educational institutions, fully online course and degree offerings offered by for-profit educational institutions, and new consortium-based on-line offerings limited to select participating institutions are but a few examples of the kinds of changes occurring, which, taken together, signal a re-segmentation of the higher education market.

At Wake Forest, the debate that swirled around the Semester Online program, our engagement with its consortium partners, and the consortium's recent dissolution is an early glimpse of the kinds of rapid change to which institutions like Wake Forest are unaccustomed. At the same time, our students understand well the shifting – and disappearing – boundaries in higher education and are prepared to embrace far more rapidly the myriad of IT-enabled learning opportunities. For them – and for many of us – technology represents not only challenge, but also *opportunity*. Today's undergraduate student has the opportunity to pursue online opportunities to gain academic credit from sources outside Wake Forest. They may use Khan Academy and YouTube to augment the courses in which they currently are enrolled at Wake Forest. Some may

be participating in MOOCs both for personal fulfillment and to enhance their Wake Forest studies. Of course, our graduate and professional programs are not immune to these trends. Our graduate counseling program represents an early foray into online delivery for Wake Forest. We believe the appeal of such models will increase. Regardless of program, faculty members and students alike use cloud-based apps for personal productivity, and remix and reuse content in new and innovative ways for which we - and academia more broadly - may be ill prepared. Without question, outside forces are re-contextualizing the Wake Forest value proposition.

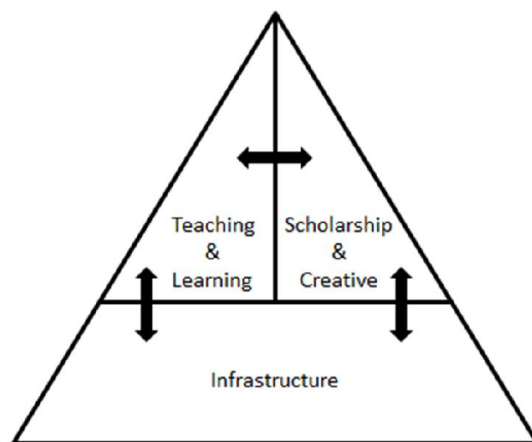
Ironically, the primary and secondary educational experiences of many of our students were more technologically advanced than their current Wake Forest experience. K-12 has, broadly considered, been a launch pad for the development of highly effective IT-enabled pedagogies that have been empirically tested and validated. K-12 teachers are trained in teaching and learning theory to a far greater extent than most terminally qualified college and university professors, which partly has fueled the rapid evolution of IT-enhanced pedagogies in K-12 education that has outpaced and outdistanced higher education. Outside of the classroom, students are employing modern web-based tools and apps to support personal productivity and collaboration with peers. Unfortunately, with regard to teaching and learning, higher education generally, and Wake Forest specifically, faces the very real threat of becoming outmoded, with the alarming consequence of a greatly diminished market appeal.

As with instructional activity, scholarship and creative productivity also is experiencing the effects of rapidly evolving technology. A migration toward open access is afoot, presenting both opportunities and challenges for higher education. The impact of scholarly and creative output increases with its accessibility. However, prevailing approaches to vetting, storing and making available the products of scholarly and creative activity often serves to limit rather than expand audiences for this work.

The teacher-scholar model at the center of the Wake Forest value proposition requires the successful pursuit of scholarly and creative goals at high levels of quality. Our *pro humanitate* ideal requires that the fruits of our labors then extend beyond the confines of our academic community to impact the broader world of which we are a part, whether through advancing further academic discourse or contributing to practice. The application of IT solutions – some of which are only beginning to emerge – can do much to amplify both the visibility and impact of our scholarly and creative activity at Wake Forest. Open access encourages the engagement of scholars with a variety of audiences as a means of efficiently disseminating important ideas. Trade non-fiction publications, blogs, and op-ed commentaries, properly conceived and executed, are examples of powerful complements to peer-reviewed journal publications, university press monographs, and the like.

As technology enables the rapid evolution of the teaching and learning experience, as well as the scholarly and creative activities of our faculty colleagues, it also presents interesting questions

regarding the IT infrastructure models that underlay these activities. Inasmuch as our infrastructure decisions have a *long-term* effect on our ability to excel in our instructional, scholarly, and creative pursuits, these investments are no less critical than investments aimed at nearer-term instructional and scholarly activities. With the advent of cloud-based computing, many IT resources historically developed and managed in-house are now easily supported by external partners. Lower costs, greater support for collaboration, device independence, and flexibility of use - all features that are vital in an academic environment – often are realized. At the same time, these new infrastructure models may carry risks regarding data security and privacy - also vital issues in an academic environment.



This, then, is our simplifying framework for contemplating the road ahead for the role of IT in the academic life of our institution (Figure 1): Through our learner-centered investments, we enhance both the learning *experience* and *outcomes* for our students. Through our investments focused on scholarship and creative activity, we advance bodies of knowledge in service to the greater good. At the intersection of these two activities, we find synergy. Our longer-term success, however, demands that we recognize the profound impact of our infrastructure investments, as it is those decisions that not only enable our near term aspirations, but often have the longest lasting impact on our options moving forward.²

In the balance of this white paper, we organize our observations, conclusions and recommendation within this admittedly simple – and, we hope, *simplifying* – framework.

TEACHING AND LEARNING

Nearly two decades ago, academicians took their first tentative steps into a mode of teaching that would become known as the “flipped classroom.” Almost simultaneously, technology vendors

² In this white paper we define infrastructure broadly, to include not only information technology, but also the built environment e.g. instructional spaces, instructional design resources, and professional development resources more generally.

brought the learning management system, or “LMS,” into the marketplace. Networked educational simulation tools, collaboration tools and online assessment tools would soon follow. Some were destined to have limited impact (Second Life, for example), while others, such as LMS, would evolve into ever more powerful assets. Meanwhile, new collaboration solutions such as Google Apps and WebEx emerged onto the higher education landscape, bringing promise but little clarity regarding how best to leverage these new resources in educational settings. All the while, the cost of computing power has moved ever downward, yielding the emergence of vast data and information repositories together with abundant affordable bandwidth. To be sure, the past twenty years has seen a flourishing of IT-based solutions aimed at the higher education industry, together with a vibrant community of educators, staff members and students eager to explore their potential. Taken together, this evolution has transformed our lives and is re-contextualizing higher education.

Given the withering pace of new technology development and deployment, it is challenging to peer very far into the future with regard to technological capabilities and the effect those capabilities may have on the life of educational institutions. In many respects, the effects will simply mirror those seen in society more broadly. Our norms of communication and collaboration, for example, will be set not singularly in higher education, but rather across a broad array of industrial, social, and political contexts. In other ways, however, technology can be expected to uniquely impact education.

As we contemplate the trajectory of our university as it relates to the leveraging of IT assets, it is tempting to advocate for the active exploration, or perhaps even deployment, of specific IT solutions. If, for example, flipped classrooms are in vogue, we must move apace to systematize our use of the flipped classroom concept. Training must be offered, infrastructure and staff resources secured, and support and incentives established. We avoid such temptations herein, believing that far more important to the preservation and furtherance of our learning community is the establishment of a durable model that allows us to identify, explore, leverage, and evaluate relevant technologies *over time* as we approach 2020. We seek to avoid episodic forays into teaching and learning IT investments, in which our interest and enthusiasm will inevitably wax and wane over time. We believe a well-considered sustained engagement with the leveraging effects of IT on the teaching and learning enterprise is imperative.

We envision an education resource ecosystem characterized by *continuous inquiry* into the merits and demerits of technology solutions. The establishment of this ecosystem depends *not only* on the identification of currently popular IT-based teaching and learning pedagogies, but also of longer-term trends that likely will drive the solutions landscape in the years leading to 2020:

1. **Shifting role of the instructor.** The most often heard observation in our research was that the role of the instructor is changing in profound ways. Personalized adaptive learning will become more prominent. The resulting learning ecosystems rely on instructors not only as subject matter experts, but increasingly as curators and facilitators. The very notion of authoritative knowledge will be challenged. Data and information will not channel solely through instructors – a trend already evident. The role of instructor will evolve to one of brokering access to relevant resources, and designing and facilitating interactions with content that are learner-centered. It will become common to engage with subject matter experts, practitioners, and students beyond the boundaries of the course and, indeed, home institution. Such an environment has been referred to as “mobilizing networks” that “stress flexibility, interactivity, and outcome.”³ Too, although MOOC utilization continues to be slow in most traditional educational settings⁴, positive results have been achieved when integrating MOOCs into traditional course environments.⁵ Simultaneously, a surge of interest in competency-based assessment has appeared. An exploding array of assessment methods and alternatives to traditional higher education are calling into question the value and relevance of the credit hour as a credential. E-portfolios, for example, allow students to compile web-based collections of evidence to demonstrate learning to potential employers or graduate schools. The concept of digital badges, an emerging method of indicating competence or accomplishment, allows students to “collect” learning credentials from disparate learning environments. Badges are one means among many of signifying achievement of learning objectives. A variety of forces and trends portend a dramatic shift in pedagogies and assessment strategies. This sea change demands a set of skills and abilities unfamiliar to many instructors.
2. **Emergence of “Anywhere Learning.”** Related to the evolving role of the instructor, significant opportunities will emerge to leverage boundaryless learning ecologies in which students are engaged with content and collaborators anytime, anywhere. So-called “second screen” strategies have been developed by instructors recognizing the power of laptop, tablet and mobile devices in classroom settings where public screens also are in use.⁶ Certainly, contemporary students expect access to data and information in ways previously unseen, particularly with regard to ease and immediacy of access.⁷ No longer are the classroom and library the primary points of knowledge delivery. On the contrary, technology carries the promise of a more persistent learning experience, one

³ Cathy Davidson and David Theo Goldberg. “The Future of Learning Institutions in a Digital Age” (Cambridge, MA: MIT Press, 2009), p.34.

http://mitpress.mit.edu/sites/default/files/titles/free_download/9780262513593_Future_of_Learning.pdf

⁴ Eden Dahlstrom, J.D. Walker and Charles Dziuban. *ECAR Study of Undergraduate Students and Information Technology, 2013* (Research Report). Lousville, CO: EDUCAUSE Center for Applied Research, September 2013. <http://www.educause.edu/ecar>

⁵ Jennifer Sparrow. Virginia Polytechnic University. Personal Interview. 1 Dec. 2013.

⁶ Lance Ford. Cisco. Personal Interview. 22 Nov. 2013.

⁷ Jennifer Sparrow. Virginia Polytechnic University. Personal Interview. 19 Nov. 2013.

characterized by a variety of learning activities occurring throughout the course of daily lives of students. It has been suggested that a “growing appreciation for the porous boundaries between the classroom and life experience, along with the power of social learning, authentic audiences, and integrative contexts, has created not only promising changes in learning but also disruptive moments in teaching.”⁸ This does not suggest the end of traditional classroom and course experiences, but rather a distinct movement away from the centrality of those experiences in learning. Here again, emergent trends point to new and unfamiliar pedagogies.

3. **Migration to BYOD.** The shift to “bring your own device” or “BYOD” computing environments continues apace. Not only are multiple operating systems the norm, but so too are multiple form factors. Not restricted to the higher education space, BYOD is a significant trend more broadly, manifesting across social and work landscapes. There even is evidence to suggest that recent graduates apply a BYOD filter when considering employment opportunities.⁹ As of 2012, 62% of undergraduate students owned a smartphone, while 15% owned a tablet device; the average number of devices per student was 2.4.¹⁰ Each device fulfills a distinct need in the academic and social milieu of a student. The aggregate of a student’s previous personal and academic IT experience creates vested interests in those devices and platforms that are not easily displaced. Wearable computing devices such as Google Glass are a natural evolution of computing device trends, hinting at yet unimagined opportunities and impacts. At the same time, content providers recognize the proliferation of computing options and accordingly are evolving to embrace most major computing platforms and devices. It simply is no longer feasible to provide a differentiated – or perhaps even state-of-the-shelf – learning experience through requiring common device or platform adoption.
4. **Evolving student preferences.** Much has been said of generational effects of our students (especially undergraduates). It is not our purpose here to recount generational evolution or to prognosticate as to the impact of generational traits on the efficacy of our learning ecologies. We recognize, however, several trends relevant to the leveraging of IT resources in those undergraduate ecologies in the coming few years:¹¹
 - Students prefer learning ecologies that combine face-to-face and online elements;

⁸ Randy Bass, “Disrupting Ourselves: The Problem of Learning in Higher Education” *EDUCAUSE Review* Online, March/April 2012. <http://www.educause.edu/ero/article/disrupting-ourselves-problem-learning-higher-education>

⁹ Michael Endler, “4 Big BYOD Trends for 2013,” *InformationWeek*. 20 Feb. 2013.

<http://www.informationweek.com/mobile/mobile-devices/4-big-byod-trends-for-2013/d/d-id/1108743?>

¹⁰ Eden Dahlstrom and Stephen diFilipo. *The Consumerization of Technology and Bring-Your-Own-Everything (BYOE) Era of Higher Education* (Research Report). Louisville, CO: EDUCAUSE Center for Applied Research, 25 Mar. 2013. <http://www.educause.edu/ecar>

¹¹ Eden Dahlstrom, J.D. Walker and Charles Dziuban. *ECAR Study of Undergraduate Students and Information Technology, 2013* (Research Report). Louisville, CO: EDUCAUSE Center for Applied Research, September 2013. <http://www.educause.edu/ecar>

- Students are keenly interested in pedagogies that leverage personal mobile devices;
- Use of social media generally is *not* a preferred communication medium for course-related activity;
- There is increasing demand for utilization of the LMS;
- More progressive education resources such as e-texts and e-portfolios have yet to achieve traction with students, resulting in ambivalence to date; and
- Very few students have taken or completed a MOOC (fewer than 5%).

Taken together, we discern a faculty and undergraduate student population that generally is receptive to, but not extremely informed about, the leveraging effects of IT. Incremental rather than wholesale change in the underlying principles of the educational experience appears warranted.

Graduate and professional education generally is ahead of undergraduate settings with regard to deployment of technology in the teaching and learning process, whether in blended or fully online settings. The needs of these student populations are generally well understood and quite distinct from those of undergraduate students.

5. **Collaboration as keystone modality.** Collaboration already is emerging as a significant attribute of the higher education landscape, with its prominence and importance likely to increase. Our students come to us with increasingly networked lives, made possible in large measure by the ever-growing array of vendor solutions aimed at supporting communication and collaboration. We also see vigorous discussion in the academy regarding collaboration as a major thrust in pedagogical evolution. For their part, recruiters consistently highlight their need for new talent that is capable of working in dynamic team-based environments,¹² many of which are virtual.
6. **Development of alternative course material platforms.** As is widely recognized, traditional textbooks are both expensive and unable to deliver rich content. From audio and video content, to collaborative and discussion group spaces, to interactive learning experiences, new media are on the cusp of revolutionizing learning materials. The dominance of the printed text may at last give way to less expensive and more impactful media. While many of these technologies are in their infancy, early products are encouraging, with rapid evolution expected. Such innovative resources are relatively difficult and expensive to create and maintain, however, and will not be appropriate to every discipline, course or instructor. Too, the publishing industry has yet to develop scalable models for such products. In the meantime, several authors within Wake Forest

¹² National Leadership Council for Liberal Education & America's Promise. *College Learning for the New Global Century*. Washington, DC: Association of American Colleges and Universities, 2007.
http://www.aacu.org/leap/documents/GlobalCentury_final.pdf

are pursuing, to varying extents, the creation of such resources. Whether outsourced, insourced, or some combination thereof, the role of these rich media resources is expected only to increase.

7. **Emergence of learning analytics.** Defined as the “measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs,”¹³ learning analytics appears poised to transform the design and delivery of educational experiences. Both students and instructors can gain important insights into how their engagement with the teaching and learning process impacts learning outcomes.¹⁴ Providing students with aggregate data on the behaviors e.g. LMS usage, and performance of their peers, which they compare to their own behaviors and performance, can be highly motivating. Instructors may elect to identify at-risk students and subsequently engage in personalized responses tailored to the needs of those students.¹⁵ The path toward robust learning analytics is one littered with questions concerning privacy, change management, data stewardship and other issues. While important, these issues are solvable and, indeed, are topics of vigorous conversation currently within the academy. The trend toward more significant reliance on learning analytics appears certain.

Finally, during our research, connectivism emerged again and again as a potent model for learning ecologies. This well-recognized (if not widely employed) concept holds that “knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks.”¹⁶ It has been heralded as “the learning theory for the digital age,”¹⁷ as it explicitly considers the role of technology, individuals, organizations, and networks in learning. Indeed, it seems that the seven aforementioned trends at last have progressed to a sufficient degree to enable a particularly robust pursuit of the principles of connectivism, and ultimately to gauge its impact. Connectivism is not new, but our ability to more effectively capture its full potential is dramatically improved through the power of technology and the pedagogies it enables. It may be that connectivism can serve as a unifying construct for any change initiative we elect to pursue at the intersection of teaching, learning, and technology.

¹³ Phil Long and George Seimens, “Penetrating the Fog,” *EDUCAUSE Review* Online, September/October 2011. <https://net.educause.edu/ir/library/pdf/ERM1151.pdf>

¹⁴ Veronica Diaz and Shelli Fowler. “Leadership and Learning Analytics” EDUCAUSE Learning Initiative, 2012. <https://net.educause.edu/ir/library/pdf/ELIB1205.pdf>

¹⁵ Diaz and Fowler, 2012.

¹⁶ Stephen Downes, “What Connectivism Is,” Weblog entry. 3 Feb. 2007. <http://halfanhour.blogspot.co.uk/2007/02/what-connectivism-is.html> accessed 4.15.2014.

¹⁷ James Walker, “Connectivism – a new learning theory,” Weblog entry. 30 Jun. 2013. <http://mnli.org/2013/06/connectivism-a-new-learning-theory/>

SCHOLARSHIP AND CREATIVE PRODUCTION

While less discussed in the mainstream higher education literature, the potential of technology to transform the scholarship and creative production environment in colleges and universities is nonetheless significant. Refinement of the processes associated with scholarship and creative production, as well as the democratization of access to the results of these efforts, drives leading edge thought that promises to change fundamentally the nature of this vital aspect of academic life. A distillation of the national and international dialogue suggests two primary trends will inform the future complexion of this important dimension of the academy:

1. **Shift to open-access scholarship.** The term “open access” first appeared in 2001 as part of the publication of the Budapest Open Access Initiative, which began in 2001 in Budapest, Hungary. Emanating from that early meeting was a definition that thirteen years later is still reflected in a greatly evolved thinking about the principles of open access scholarship:

By ‘open access’ to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.¹⁸

Over the course of two additional conferences, this definition evolved into the commonly referenced BBB definition (that is, Budapest/Bethesda/Berlin), which is far more detailed and nuanced, though the spirit of the original definition remains. Wake Forest has been a signatory to the Berlin Declaration since 2012.¹⁹ (Details of the BBB definition are readily available online and are beyond the scope of this white paper.) Open access is expected to have a strong positive impact “on the construction of research questions and methodologies, on the design and conduct of experiments, and on the communication and, ultimately, the use of research by various stakeholders.”²⁰ This aligns strongly, of

¹⁸ Budapest Open Access Initiative FAQ. 2012. <http://legacy.earlham.edu/~peters/fos/boaifaq.htm#openaccess>

¹⁹ Crafted in October 2003, the Berlin Declaration was intended “to promote the Internet as a functional instrument for a global scientific knowledge base and human reflection and to specify measures which research policy makers, research institutions, funding agencies, libraries, archives and museums need to consider.” <http://openaccess.mpg.de/286432/Berlin-Declaration> Accessed 10 May 2014.

²⁰ Heather Joseph, “The impact of open access on research and scholarship,” C&RL News, February 2012, p.83-87. <http://crln.acrl.org/content/73/2/83.full>

course, with the commitment of Wake Forest to have positive impacts on society locally, nationally and globally. Simultaneously, open access carries with it the potential to elevate the visibility and, by direct extension, reputation of our university. Open access aligns strongly with our *pro humanitate* ideal. We expect the significant majority of reputable institutions will move in the direction of open access, removing barriers to collaboration between scholars, dramatically broadening the consumption of scholarly output, and invigorating new lines of scholarly inquiry.

- 2. Shift to comprehensive institutional repositories and the archiving of data and scholarship.** The rate of production of data and information products globally is increasing exponentially. Colleges and universities are significant contributors to an ever-growing body of knowledge across a wide array of fields and disciplines. More importantly, the *diversity* of work product types emanating from institutions of higher learning is similarly growing, no longer limited to traditional publication, patents and the like. The realization of the full potential of open access scholarship and creative production depends locally on the establishment of comprehensive institutional repositories of scholarly work, as well as archives of data with potential and proven scholarly value. Such repositories hold the promise of dramatically increasing the efficiency with which other scholars access and springboard from existing resources, avoiding the substantial direct and indirect search costs commonly experienced by scholars today.

The notion of academic research and creative production generating work products protected behind paywalls, only to be utilized by those with requisite financial resources is rapidly becoming an anachronism. For too long the audience for – and impact of – our scholarly and creative pursuits has been far too constrained. Through technology, we have the potential to effect a welcome discontinuity in the way our scholarly and creative outputs impact the world of which we are a part.

CLOUD-BASED COMPUTING

It generally is recognized that IT infrastructure investments offer a more indirect and longer-lasting impact in terms of value benefits. Determining value – especially *financial* value – often is exceedingly difficult as the benefits of these assets accrue to different parts of the organization in different and uneven ways.²¹ These investments often are nonetheless essential enablers to other IT investments. The value propositions of many of the IT-based innovations currently emerging and projected to emerge in the higher education landscape in the near future almost certainly will depend upon two key trends:

²¹ Acer Maamoon, “The Business of IT: Calculating the Value of IT Infrastructure in Government,” TechNet Magazine, October 2007. <http://technet.microsoft.com/en-us/magazine/2007.10.businessofit.aspx>

1. **Shift from local to cloud computing.** Computing, and its accompanying infrastructure, effectively has become a utility resource in modern university settings. Not surprisingly, these IT assets often now are viewed as cost centers rather than strategic resources. Against this backdrop, our research indicates that for both our peers and our corporate partners, the year 2020 will be characterized by some nontrivial degree of publicly-managed cloud computing. Cloud computing, broadly defined, is the deployment and use over a network of computing resources that traditionally have been available on a local computing device. Arguments for cloud computing include allowing for scalability of resources, device independence, support for collaboration, and environmental and cost efficiency. Like many other commodities, the strategic apportioning of computing performed with local resources versus that performed through outsourcing to a public cloud is instrumental in meeting requisite computing resources, data security, and financial obligations.
2. **Migration to BYOD.** Already discussed earlier, the shift to BYOD computing environments is a trend that dramatically impacts the teaching and learning environment directly, as well as the infrastructure investments on which those experiences depend.²² BYOD computing, while responsive to societal and industry trends, presents a more complex support environment for organizations. While cloud-based computing carries with it the promise of true device-independence with regard to software applications, the additional challenges associated with providing support likely will force an uncomfortable tradeoff between increased costs and reduced service levels. In this scenario, the necessity to effectively manage expectations of the user population becomes paramount.

The impact of IT infrastructure decisions made today will impact our institution conceivably for years to come. Our ability to realize the vision set forth earlier in this white paper depends upon making infrastructure decisions that not only enable our near-term aspirations, but also that afford the flexibility required to meet new opportunities as they arise.

THE WAY FORWARD

The role of information technology in higher education is broadening and deepening. Our ability as an institution to remain appropriately vigilant in a rapidly changing technology landscape, and to enact well-considered responses to new IT-related opportunities, will depend fundamentally upon the concerted efforts of an *array* of individuals and teams at Wake Forest. We recommend

²² Eden Dahlstrom and Stephen diFilipo. *The Consumerization of Technology and Bring-Your-Own-Everything (BYOE) Era of Higher Education* (Research Report). Lousville, CO: EDUCAUSE Center for Applied Research, 25 Mar. 2013. <http://www.educause.edu/ecar>

a set of actions and commitments toward that end, while emphasizing the need to carefully *align* these efforts. The technology imperatives facing our institution do not exist in a vacuum, but, as we describe directly, instead touch a myriad of other dimensions of the institution.

Recommendations regarding teaching and learning

While large lecture classroom format, the popular media's perennial example of passive, outmoded teaching, has never been a feature of the educational experience at Wake Forest, it is becoming increasingly evident that the traditional "sage on the stage" model is being ushered out by emerging student-centered and technology-enhanced pedagogies. Technology-enabled methods of not only content delivery, but also student *engagement*, create possibilities for innovative new uses of class time and physical space. Faculty members teaching in flipped classrooms deliver content online before using face-to-face class time for authentic, active learning. Those in blended courses utilize the affordances of both online and the face-to-face learning environments to enhance learning outcomes while at the same time reducing strain on limited physical resources. Fully online courses have demonstrated learning outcomes equal to those achieved in face-to-face settings in some instances. Not surprisingly, the affordability, ease of use, and fidelity of the underlying technologies employed in these new pedagogies is expected to improve rapidly, heralding an unprecedented period of fundamental and likely disruptive change in higher education worldwide.

As IT-based pedagogies have evolved rapidly in recent years, so too has consideration of the potential of the built environment to enable and amplify the benefits of those pedagogies. A wide array of new classroom designs has emerged, affording unprecedented pedagogical flexibility. Leading edge classroom technologies (including IT, furnishings and supporting tools) offer the opportunity to reconfigure classroom settings "on the fly," thereby allowing rapid shifts between pedagogical techniques during class sessions. Students move between individual, team and whole-class activities seamlessly. Contract furnishings vendors have been instrumental in conducting early empirical research into the efficacy of these designs; results are encouraging.

The impressive rate of change in both IT-enabled and space-enabled pedagogies already manifest in education suggests several imperatives for our academic community at Wake Forest.

Recommendation 1: Align our resources. We recommend the establishment of a Center for Excellence in Teaching and Learning²³ to reduce coordination costs and drive powerful synergies. The purpose of the Center will be to align within a single administrative unit *all* relevant resources to drive excellence in the teaching and learning enterprise. The Center is envisioned as encompassing the current Teaching and Learning Center (TLC), the Office of Online Education, the Instructional Technology Group, Digital Publishing, relevant faculty in

²³ "The Center for Excellence in Teaching and Learning" is used throughout the balance of the white paper, but should be considered a placeholder name.

the Z. Smith Reynolds Library, and relevant resources from Information Systems e.g. R&D staff members.²⁴ Charged with providing instructional design services, faculty development, instructional technology training, and aligning pedagogical activity with physical and technological infrastructure, the Center also will house instructional design, instructional technology and production resources not yet present in the Wake Forest portfolio. As envisioned, the Center is capable of supporting a faculty member through the entire course development process, including ideation, design, development, technology, training, media production, and learning outcome assessment activities. Viewed as far more than an internal consulting unit, through its communication and change management strategies, the Center will ignite enthusiasm for experimentation and foster innovation in teaching and learning. Through the *aligned* resources of the Center, faculty members will be further empowered to achieve their highest aspirations as teachers and scholars. Center staff members will be active advocates for excellence in teaching and learning in all its forms, with special emphases on the leveraging effects of technology. Housed in a purposely-designed space, the Center will support laboratory-based development and training for instructors, while also showcasing innovative IT-based solutions identified through its ongoing monitoring of the educational IT landscape.

Recommendation 2: Focus our efforts. In order to develop a common understanding of and appreciation for proven instructional strategies within our teaching and learning community, we recommend the introduction of highly focused intensive developmental programming focused on IT-enabled pedagogy. Such programming likely will be semesterly or annually. Current topical examples appropriate to such an initiative would include flipped classrooms, virtual teaming, leveraging mobile devices, “second screen” strategies, and digital badges, to name but a few. Through the Center, these and as-yet-unimagined topics will be the focus of *all* Center resources for an entire semester or academic year. While the Center may remain responsive to other simultaneous needs, its primary thrust will be to drive awareness of, experimentation with, and adoption of proven and emerging IT-enabled pedagogical strategies.

Recommendation 3: Commit to innovative learning spaces. We encourage the exploration and development of collaborative learning environments/spaces that include computing in order to support shared experiences. Well-designed active learning spaces can serve as centers for creative thinking, study, and other gatherings. There are some de-facto spaces on campus, such as the Z. Smith Reynolds Library Starbucks and Farrell Hall living room that already reflect the desire of our students, faculty, and staff to gather in these public spaces, whether for individual or collaborative work. We have not yet made significant investments in more advanced instructional spaces, however. Learning theorists and space designers are recognizing the synergistic interplay between space and technology, with new evidence-

²⁴ As a matter of practicality, it is recognized that some resources may have a “dotted line” relationship with the Center e.g. specialized members of the library and IS staff.

based space and furnishings designs emerging at an impressive rate. We believe that the full potential of IT to positively impact teaching and learning is realized only when considered in concert with the spaces within which we teach, learn, and interact.

Recommendations regarding research and creative production

Faculty scholarship and creative production disseminated through traditional channels e.g. peer-reviewed academic journals, remains relevant. Compared to only a decade ago, however, a more extensive array of venues is available to scholars wishing to have a broad impact upon society. Ways of engaging audiences that have not heretofore been widely leveraged by scholars are gaining in popularity. Owing to the broad reach of mechanisms such as blogs, op-ed contributions, and even trade non-fiction works, the impact of scholars is broadening. While peer-reviewed journal articles and university press monographs may remain the “coin of the realm” in gauging the quality of faculty productivity, a broader conception of research and creative production will increase both the visibility and the impact of the scholarly work of our faculty.

Recommendation 4: Join the Open Access Movement. The open access ideal encourages scholars to engage with a variety of audiences in order to facilitate the spread of important ideas. The technological aspect of this cultural shift is mature and relatively easy to implement. Wake Forest should move boldly to join the burgeoning open access movement that is taking hold within many leading academic institutions. Academic journals and other avenues for scholarly publication housed at Wake Forest can be made freely available to a worldwide community via the Internet. The benefits of wider visibility through free access to our journals outweigh marginal impacts to subscription and other revenue.

For scholarly works published in journals other than Wake Forest publications, faculty members should be encouraged to negotiate less restrictive publishing agreements that allow them to repurpose and republish those works in other venues, including our own institutional repository (see below) and on the web. Fortunately, we already have expertise on our campus to provide best practice training. Library faculty members of the Z. Smith Reynolds Library unanimously adopted an open access policy on February 1, 2010 to achieve the widest possible access to and long-term preservation of their scholarly works. Each library faculty member grants Wake Forest University the right to archive and make publicly available the full text of the author’s final version of scholarly works via the University’s open access institutional repository. This provides the University the nonexclusive, worldwide, irrevocable, royalty-free license to preserve and redistribute the work. When publisher agreements do not automatically grant permission to archive the author’s final version, library faculty commit to negotiating for such rights. Library faculty members submit an electronic version of the author’s final version in an appropriate format as soon as possible, respecting some publishers’ requests for embargo. Furthermore, library faculty members endeavor to publish their scholarship in open access venues whenever possible. The potential

of the repository to contribute to the academy and beyond while also enhancing the reputation of Wake Forest is tied directly to the participation of faculty members across the university.

Recommendation 5: Commit to a robust Wake Forest electronic repository. We believe our university must commit to preserving all manner of works and work products developed by our faculty colleagues, thereby creating a valuable record of the intellectual work of our university. We already have made significant strides with the establishment of our institutional repository “WakeSpace.” We must commit to specific enhancements to WakeSpace: 1) increase the volume of works deposited there by encouraging faculty in all academic units to consider the benefits of open access to their scholarship, including establishing their own mandates in addition to the one by library faculty for their own scholarship, and 2) improve the WakeSpace interface for ease of search and display.

Recommendations regarding IT infrastructure and cloud-based computing

Emerging as a major technology trend only three years ago, cloud computing will continue to have a significant impact on organizational computing in the foreseeable future. The concept of cloud computing continues to evolve, with private cloud and hybrid cloud models emerging. Migration to cloud-based computing, when and where appropriate, can be complex, however, as basic assumptions of extant IT investments may no longer be appropriate. Still, cloud computing is not a fleeting fad; higher education stands to benefit tremendously from cloud computing initiatives rooted in thoughtful planning and meaningful collaborations with our education and industry partners.

Recommendation 6: Commit to the cloud. We appreciate the initiative of Information Systems in early university-wide adoption of cloud-based services such as Google Apps for Education, WebEx, and pilot-testing cloud backup solutions. We recommend that Information Systems continue to develop the skill sets needed to fully embrace the power of cloud applications and that they commit to significantly increased cloud computing in our academic community.²⁵

Recommendation 7: Become device-agnostic. Even as our university evolves in its requirement for a standard issue laptop and software load, we must be responsive to growing evidence that campus populations will employ a myriad of computing devices even when all members of the community own a common device(s). The resulting collection of devices, platforms and form factors enable compelling new modes of interaction, which we should encourage and support. However, it generally will be cost prohibitive to create or acquire

²⁵ There is clear need to carefully delineate those data and information assets that can be legally moved off-campus. Although the use of third-parties to support computing raises security concerns, it is important to recognize the extent to which security concerns exist even when data are stored locally by the University.

device-specific solutions across a broad array of devices, pointing to the need to marry our device and cloud-based strategies, each informing the other. Most fundamentally, we recommend the aggressive pursuit of efforts aimed at making the software resources required to actively participate in the life of our campus (including academic services such as WIN, as well as commonly employed software) device-agnostic.

We recognize that cloud based solutions are not yet available and/or satisfactory for every academic need. Tablets and smartphones perform well for content consumption, but effective creation and collaboration often require the processing power and screen sizes that are still found only in laptops and desktops. Therefore, we recommend all students be provided or required to purchase laptops and software of sufficient power and utility to meet their academic needs.

The mandating of a single laptop model is no longer warranted by academic need.²⁶ Therefore, we further recommend that students and faculty members be given a choice of a Windows or Apple laptop. In the event the university moves to a student-owned funding model, we recommend that students demonstrating financial need be provided a laptop adequate for their academic needs. The Committee on Information Technology noted in its 2012 report that while mandating a single operating system is no longer justified by academic considerations, collaboration is best supported by software that is compatible across platforms. We must therefore continually evaluate cloud applications, as they will increasingly be the most cost-effective and device-agnostic solutions. For those applications requiring a laptop, the university should strive to deploy applications demonstrating strong cross-platform functionality.

Recommendation 8: Be evidence-based. As we reassert our commitment to capturing the value at the intersections between teaching, learning, scholarship, and technology, significant decisions regarding computing resources on our campus should be evidence-based. We must hold ourselves accountable to understand actual usage levels and patterns associated with these resources, requiring that we establish mechanisms to gather and analyze data that will drive agreed-upon metrics. As we embrace the value of experimentation in our academic community, it will be vitally important to accurately differentiate between those investments that are efficacious and those that are not.

Recommendation 9: Keep the network strong. We believe it is important to underscore the continued centrality of highly reliable and adequate network connectivity. Cloud computing, device independence, IT-based collaboration, and rich media learning resources all demand high quality connectivity. Understanding that high quality network connectivity will be an assumption of all populations when active on campus is critical. Resources committed to

²⁶ 2012 CIT Next Steps report, Wake Forest University

ensuring connectivity should be focused on-campus, with modest expectations for institutional support for off-campus connectivity.²⁷

Recommendations toward sustainable success

The preceding nine recommendations can be *initiated* quickly and with little or no disruption to our daily activities as an academic community. The ability to *sustain* the benefits from these initiatives depends upon deeper change, however. The absorptive capacity of our community likely is insufficient to maintain new ways of doing and new ways of thinking about our most fundamental activities absent an intentional effort to collectively and collaboratively develop *not* as a loose collection of individuals, but rather as a cohesive whole committed to a common vision.

Recommendation 10: Become a learning community. We believe in the power of shared energy. As noted earlier, the ability of individuals to contribute within collaborative environments will be essential to both individual and organizational success. Whether sharing lessons learned in the use of technology in teaching and learning, or exploring the boundaries of open access to scholarly output, we will advance more quickly and meaningfully both individually and collectively if we embrace collaboration. We must be willing to seek and receive guidance from one another as we venture into new territory as teachers and scholars. Toward that end, the activities in which we engage should signal the expectation that each of us has an obligation to contribute to the advancement not only of our own efficacy, but also to that of our colleagues. The allocation of technology resources, often conducted through the proposed Center, will favor requests from colleagues who demonstrate the ability to be ambassadors of change.

Recommendation 11: Signal our commitment. Achievement of the vision articulated earlier will require persistent effort. We should remind ourselves of our commitment in visible and meaningful ways. Such signaling communicates the value placed on our journey of continuous improvement. We recommend two signaling mechanisms: (1) the tenure and promotion processes of our university should acknowledge and value the robust pursuit of IT-enabled efforts in teaching, scholarship, and creative production, and (2) honorific titles should be awarded to instructors having significant positive impacts through the application of IT in their teaching, scholarship and/or creative work, as well as on our academic community more broadly.²⁸

²⁷ There has been informal discussion on our campus regarding the potential of purely network-resident productivity suite. While we are intrigued by the potential of these solutions, we assert that software used by significant portions of all populations and fundamental to the successful work of all populations (such as word processing tools) should be supported in local (non-network) modes.

²⁸ Consider, for example, the Google Certified Teacher concept associated with the Google Teacher Academy.

Recommendation 12: Establish financial stability. Teaching, research, and creative production is at the heart of academic community, and the support of these activities can reasonably be expected to find support in the operating budget of our university. Nonetheless, we advocate for stronger coordination among all entities on campus identified as contributors to the pursuit of the vision articulated in this white paper; a portion of their funding should be directed toward tightly coordinated efforts. The Teaching and Learning Center, Office of Online Education, Information Systems, Z. Smith Reynolds Library, Professional Development Center, and others, are natural partners on this journey, and their efforts should be synergistic.

While support in the university operating budget will be necessary, we nonetheless believe creative approaches to securing significant funding and other forms of support for the pursuit of the vision put forward in this white paper are possible. Federal grant agencies, as well as corporate and private partners, hold promise.

Recommendation 13: Go slow to go fast. It generally is recognized that change in organizations is difficult. Change threatens, increases uncertainty, and often generates resistance. We must acknowledge our natural individual and collective reactions to the change implied in the foregoing twelve recommendations and articulate our movement into IT-related initiatives with sensitivity toward them. Toward that end, we recommend (1) incremental rather than wholesale change, inviting into our journey first those individuals and groups interested and willing to embark, (2) utilize the concept of pilot programs to reduce the risk in specific projects, while also conducting easily observed experiments in our academic environment, and (3) work initially at the periphery of our core activities and processes rather than at the core itself, again as a risk mitigation strategy. These recommendations reflect established best practices across a variety of organization contexts and have been demonstrated to have strong positive impacts during change initiatives.

CONCLUSION

In this white paper, a series of recommendations have been put forth that, executed in a thoughtful and timely manner, not only preserve the most compelling attributes of the Wake Forest teacher/scholar ideal, but also amplify the impact of our teaching, scholarship, and creative production efforts. These recommendations intentionally leverage existing resources and institutional capabilities, enabling their pursuit in the very near future; additional resource requirements, where necessary, lend themselves to external funding opportunities.

The recommendations offered herein also reflect a profound optimism regarding the future of our institution. The ways in which we participate in and contribute to the broader social, cultural and economic systems within which we exist are changing rapidly. The year 2020 will, in all likelihood, bear strong resemblance to our current environment, but underlying the similarities

strong currents of change will be manifest. Perhaps more than most institutions of higher learning, Wake Forest is exceptionally well poised to seize upon the opportunities that already present themselves to enhance its already substantial vitality and relevance. The door is now open for us to involve ourselves deeply and meaningfully in the momentum that already is transforming the face of higher education. It is a challenge to which we have risen before, and to which we can - and must - rise once more.

Appendix 1: Vision 2020 Committee Members

The Vision 2020 committee consisted of seventeen members of the Wake Forest community:

- Bernadine Barnes - Professor, Art History
- Laura Chin – Wake Forest Fellow, Information Systems
- Jennifer Collins - Professor of Law; Vice Provost
- Nancy Crouch - Deputy CIO, Information Systems
- Kyle Denlinger - eLearning Librarian, Z. Smith Reynolds Library
- Jerid Francom - Assistant Professor, Spanish and Linguistics
- Ana Iltis - Associate Professor, Philosophy; Director of the Center for Bioethics
- Christopher Knott - Professor of Law; Associate Dean for Information Services and Technology, Law School
- Brenda Knox - Director of Online Education
- Caroline Lee - Student Representative, President of Student Technology Committee
- Rick Matthews - CIO, Information Systems; Professor, Physics, Co-chair
- Gordon McCray - Associate Professor, School of Business; Associate Dean of Academic Programs, School of Business
- Clinton Moyer - Postdoctoral Fellow, Divinity School
- Jeffrey Nichols - Instructional Technology Specialist, Religion and Anthropology Departments
- Lynn Sutton – Dean, Z. Smith Reynolds Library, Co-chair
- William Turkett - Associate Professor, Computer Science
- Alessandra Beasley Von Burg - Associate Professor, Department of Communication

Appendix 2: Charge to the Vision 2020 Committee

The Vision 2020 committee will lead a campus exploration of the future of academic computing technology, including but not limited to the following:

- Assess the availability of cloud-based technologies that support the academic mission, with particular attention to alternatives to Windows client software as locations for the undergraduate standard load.
- Facilitate assessment of the effectiveness of such software in different user environments, ranging from high-quality connectivity, to more limited connectivity typical of home networks, as well as offline use.
- Identify new functionalities supporting the academic mission not possible with stand-alone client software.
- Identify technologies and skills needed to support a cloud environment.
- Identify the role of locally-hosted cloud solutions (virtual computing labs and private cloud) vs. third party solutions.
- Identify opportunities and limitations for device independence as software and services are delivered via the cloud.
- Identify security concerns related to cloud computing and to types of data that may need additional protection or approvals.
- Identify where online and blended education have the potential to enhance learning and recommend strategies to support these.
- Consider collaboration as a core competency.
- Facilitate the assessment of game-based learning.
- Identify strategies for improving learning analytics.
- Ensure that adopted technology can be a tool for supporting and enabling diverse approaches, learning styles, and perspectives, rather than creating a digital divide.
- Facilitate the adoption and creation of effective rich, interactive, adaptive texts.
- Recommend strategies to exploit free and affordable texts, journals, and monographs, both as consumer and creator.
- Recommend strategies to expand and build robust, accessible public archives of our scholarship and data.
- Identify avenues to enhance learning and scholarship via wearable computing.
- Explore mobile web and mobile apps as opportunities for “access to everything everywhere.”
- Identify avenues to enhance learning, scholarship, and creative activity via the “internet of things.”

Appendix 3: Process

The observations and recommendations set forth in this white paper are reflective of primary and secondary research conducted by members of the Vision 2020 committee during the 2013/2014 academic year. Literature reviews, site visits and interviews were employed extensively (see Appendix 4). Emphasis was placed on interactions with recognized experts in their respective fields. The committee elected to “divide and conquer” its substantial charge (see Appendix 2), forming three topically oriented sub-teams:

1. *Team Teaching and Learning*. This team focused primarily on the role of technology and instructional space (past, present and future) at Wake Forest.
2. *Team Cloud*. This team focused on the likely effect of cloud computing on a wide array of dimensions pertaining to computing at Wake Forest.
3. *Team Open/Scholarship/Data*. As its name suggests, this team focused on an array of issue not easily captured under either of the other two teams.

Appendix 4: Visits & Interviewees

- Polly Black, AVP and Director, Center for Innovation, Creativity and Entrepreneurship, and Professor of Practice, School of Business, WFU
- Kel Boyer, Lilien Systems
- Malcolm Brown, Director, EDUCAUSE Learning Initiative (ELI)
- Jaime Casap, Global Education Evangelist, Google Inc.
- Andy Chan, Vice President, Office of Personal and Career Development, WFU
- Wesley Chen, Engineer, Google Inc.
- Will Clarke, Senior Systems Administrator, Z. Smith Reynolds Library, WFU
- Veronica Diaz, Director of Online Programs and Associate Director of ELI
- Thomas Dowling, Director of Technologies, Z. Smith Reynolds Library, WFU
- Lance Ford, Education Advocate, Cisco Inc.
- Shelli Fowler, Senior Director of Networked Pedagogies and Director of NLI, Virginia Polytechnic Institute and State University
- Claire Gilbert, Associate Director for Strategy and Analysis in Information Technology, Virginia Polytechnic Institute and State University
- Kevin Gilbertson, Web Services Librarian, Z. Smith Reynolds Library, WFU
- Karen Gray, Assistant Director of Emerging Technologies and New Ventures, Virginia Polytechnic Institute and State University
- Casey Green, Founding Director, The Campus Computing Project
- Dan Johnson, co-creator of Biobook, Associate Teaching Professor, Biology, WFU
- William Kane, Digital Publishing, WFU
- Molly Keener, Scholarly Communication Librarian, Z. Smith Reynolds Library, WFU
- Carter Kersh, Juniper Networks
- Jon Landis, Development Executive, Apple Inc.
- Jeremy Larensen, Distinguished Systems Engineer, Global UCC Strategy, Cisco Inc.
- Mark Medovich, Juniper Networks
- John Moore, Strategy and Planning for Learning Technologies, Virginia Polytechnic Institute and State University
- Susan O'Day, Chief Information Officer, Disney Corporation
- John Orbe, Juniper Networks
- Jordan Pedraza, Enterprise Education Team, and Google Project Manager for WFU Google Apps implementation, Google Inc.
- Jen Phillips, University Relations Manager, Google Research, Google Inc.
- Lauren Pressley, Associate Director for Learning & Outreach, Virginia Polytechnic Institute and State University Library

- Catherine Ross, Director of the Teaching and Learning Center, WFU
 - Mary Schlegelmilch, Business Development Manager, Cisco Inc., and President, Nebraska Distance Learning Association
 - Joe Schueller, Global Collaborations Sales and Strategy, Cisco Inc.
 - Oliver Schuermann, Juniper Networks
 - George Seimens, MOOC visionary and originator of Connectivism theory
 - Jessica Shannon, Juniper Networks
 - Mike Sims, Juniper Networks
 - Jennifer Sparrow, Director of Emerging Technologies and New Ventures, Virginia Polytechnic Institute and State University
 - Jared Stein, Vice President of Research and Education, Instructure
 - Paul Whitener, Network Architect, WFU Information Systems
 - Carl Wiese, Senior Vice President, Global Collaboration, Cisco Inc.
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- 2013-2014 Wake Forest Fellows, Alumni ('13)
 - Paige Bosworth
 - Francie Fisher
 - Ben Magee
 - Jim O'Connell
 - Lindsay Schneider
 - Sarah Sebtton
 - Brad Shugoll
 - Lauren Suffoletto
 - Katie Wolf
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- WFU faculty members
 - Alessandra Beasley Von Burg
 - Bernadine Barnes
 - Ana Illtis
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- Students in the course entitled "Design Thinking and High Performance Teams" taught by Evelyn Williams and Gordon McCray. Student teams were charged with designing a new educational experience for Wake Forest students as envisioned in the year 2020.