USF SYSTEM
New Academic Degree Program
Pre-Proposal Signature Form

New Academic Program Pre-Proposal Process
New academic program Pre-Proposals are initiated and developed by the faculty. Approval of the Pre-Proposal must be obtained from department chairs and college deans or equivalent administrators before submission to the institutional faculty council contacts for review and subsequent USF System-level review and consideration for inclusion on the USF Annual Work Plan.

For contact information please visit the USF System Academic website.

New Academic Program Pre-Proposal Signature Page

PRE-PROPOSAL APPROVAL for the proposed: Ph.D. **degree in** Informatics

PRE-PROPOSAL APPROVAL	Print Name	Signature	Date
Faculty Name (Sponsor) and Email	Randy Borum borum@usf.edu		Oct. 3, 2017
Department/Division Chair	James Andrews		Oct. 3, 2017
College Dean or Designee	Bob Potter		10/3/17
USF Institutional Faculty Council Designee			
APAC Chair			

New Academic Degree Program Authorization Pre-Proposal Form

New Academic Program Pre-Proposal Process

New academic program pre-proposals are initiated and developed by the faculty members. Approval of the pre- proposal must be obtained from department chairs and college deans or equivalent administrators before submission for Academic Affairs level review and consideration for inclusion in the University's Annual Work Plan.

Institution	USF Tampa
Degree Program Title (e.g. M.A. in Biology)	Ph.D. in Informatics
CIP Code	11.0104
Proposed Delivery Mode (% online, if applicable)	85% traditional classroom; 15% online
Enrollment Projections (Headcount): Year 1 and Year 5	Year 1: 5 Year 5: 25
Proposed Implementation Date (e.g. Fall 2014)	Fall 2019
Other Programs in the SUS (Including Enrollment and Degrees):	University of Florida; Ph.D., Human-Centered Computing. Enrollment: 30, 2016

Program Summary: (*Briefly describe the proposed program*)

1. Briefly summarize the overall rationale for the new academic program and consider the following in your narrative:
    - Ways in which the proposed program is distinct from others already offered in the SUS (use the 4-digit CIP as a guide).
    - How this program supports specific university and SUS missions.
    - Collaborative opportunities with other SUS institutions as appropriate. (maximum length 250 words)

The **Ph.D. in Informatics** will be an interdisciplinary STEM program, focused on how people *use* information and technology to generate data driven insights that solve complex problems. USF's School of Information (referred to as the "iSchool") will lead and administer the program working collaboratively with other research and academic units across the University.

Informatics is the interdisciplinary, applied science of information. It is a diverse field with computational, cognitive, and social dimensions. The iSchool's **Ph.D. in Informatics** will add value to Florida's portfolio of doctoral programs by focusing on three unique areas of emphasis: (1) Clinical Research Informatics, (2) Security /Intelligence Informatics, and (3) Social/Digital Humanities Informatics.

Our program will prepare information innovators and leaders for positions in the public and private sectors where data and information have become integral parts of organizational decision-making, planning, and operations, and for academic positions to prepare the next generation of applied information scholars.

This proposed program does not duplicate the efforts of any existing programs in Florida. The only other SUS program using the Informatics CIP code (11.0104) is the University of Florida's doctoral degree in Human-Centered Computing (HCC). HCC centers on computing. Informatics—as we are applying it here—centers on information. HCC produces computer scientists and engineers generating human-centered solutions to technology-based problems. Our program will produce information professionals generating data/knowledge-centered solutions to human problems. They are complementary, but distinct areas of specialization

The **Ph.D. in Informatics** aligns directly with USF (2013-2018) and SUS Strategic Planning Goals and the Board of Governors' Areas of Programmatic Strategic Emphasis by supporting high-impact research and innovation, driving USF's role as a major economic engine, and mobilizing public-private partnerships to increase economic and employment opportunities.

Student Demand: *(Describe the demand in the SUS for the proposed program)*

2. Briefly describe the student demand for the proposed program and consider the following in your narrative:
   - Explain why a student would be interested in this program.
   - Recognizing that programs at different levels may require different degrees of justification (e.g., greater duplication may be warranted at undergraduate and master's degree levels), indicate why duplicative programs should be warranted.
   - Numbers of graduates and students enrolled in similar programs currently offered online or face-to-face. For assistance, see the Board of Governors interactive data source, http://www.flbog.edu/resources/iud/.
   - As applicable: place-bound learners, underserved populations in the field/profession, and professional credentials requirements. (maximum length 250 words)

Students seeking a **Ph.D. in Informatics** will enter today's most dynamic and high demand career fields with a unique skillset that adds value to any organization/enterprise. Because contemporary organizations are growing in size, complexity and data-reliance, the job prospects are very encouraging. Most students pursuing a Ph.D. are looking to advance their careers. Informatics is a field that is flexible, growing, and built on innovation.

The proposed Ph.D. should appeal not only to students seeking academic jobs, but also to aspiring industry innovators and leaders in the public and private sectors. More organizations are building their "digital" capabilities. Our graduates will be prepared to lead their teams and to develop programmatic strategies, beyond specific data analysis decisions. With a blend of data/information and sector-specific expertise, they will be prepared to connect and translate the information needs of executive decision makers with the data analyses produced by mathematicians and statisticians. They also will be well-positioned to develop the next generation of information tools. It is an ideal "career enhancement" path for data/information professionals.

Many doctoral programs have far more applicants than they can accommodate. University of Florida advised us that they receive well over 1,000 applicants annually to their three doctoral programs (CS, CE, and HCC), and accept only about 30. Their HCC program (the only other program in Florida using the "Informatics" CIP Code) is growing rapidly and currently has over 30 students (of the roughly 140 total doctoral students).

Our emphasis areas are also aligned with peak growth sectors, which will have the greatest needs for senior leadership to mature their data/information capabilities. Not only are they exciting and interesting fields, but those sectors will also have the most jobs available.

Workforce and Economic Development Needs: *(Describe how the proposed program meets workforce and economic development needs)*

3. Briefly describe how the proposed program meets workforce and economic development needs and consider the following in your narrative:
    - Impact of this program (local, state, national, and international).
    - Impact of research funding.
    - Changing of professional credential requirements. (maximum length 250 words)

Informatics is a high-demand career field, and it is also one of the fastest growing. Integrated expertise in analysis, technology, domain knowledge and leadership make such graduates desirable to government and private sector organizations, as well as academia. The proposed Ph.D. aims not just to produce data analysts or subject matter experts, but "boundary spanners;" those who can apply the right data, and perform the right analysis, to answer the right question and communicate results to the right user.

The field probably aligns most closely with the Bureau of Labor Statistics'(BLS) category: "Computer and Information Research Scientists" (for which entry-level qualifications require a doctoral or professional degree). According to BLS data, the overall job outlook for positions in this category is predicted to grow by 11% over the next ten years, which is faster than average.

Projections Central anticipates that nationally about 600 new jobs in this field will open up each year between now and 2024, future demand in Florida specifically is expected to be positive. The median salary as of May 2016 was $111, 840. Positions, requirements, and salaries vary across industries, and there is equivalent demand in academics for Informatics Ph.D.s in our proposed areas of emphasis.

In 2015, Indiana University's doctoral program in Informatics issued a hiring report[1]. All (100%) of the program's graduates were employed by well-known companies and universities, with an average starting salary of $92,000. These were informatics students from a broad range of areas, including security informatics, music informatics, health informatics, and others.

Federal research funding is also available to support informatics research. Given our areas of emphasis, likely agencies include: NIH, NSF, AHRQ, DoD, IARPA, DARPA, ALA, IMLS, and others, including private industry or national laboratories. A strength of this program is the ability to connect doctoral students to funded research projects or other key research activities that will distinguish them in the job market.

☐ **I support the exploration of this degree proposal.**

Print Provost's Name

[1] https://www.soic.indiana.edu/doc/career/phd-hiring-report-2016-02-19.pdf

Provost's Signature

Date

USF Pre-Proposal (For the USF Work Plan)
Supplemental Application Form
For internal USF use only

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PROGRAM PROPOSAL INFORMATION	TYPE/PRINT CLEARLY
USF Institution	Tampa
College	Arts and Sciences
Department/equivalent	School of Information
Are any other academic programs at USF offered under this CIP code at the 4-digit level (e.g. 45.01 versus 45.0103) *If yes, list the Institution and Major/Program name. Note that an MOU will be required. Contact OIE for assistance with an MOU.*	No
Does FAMU or FIU have the four-digit CIP? (e.g. 24.01) ☐ yes ☒ No	No
Target date for submission to USFBOT	May 2018

1. How does this program support the institutional, USF System, and SUS Strategic Plans?

   The interdisciplinary **Ph.D. in Informatics** aligns directly with USF System (2013-2018) and SUS Strategic Planning Goals and the Board of Governors' Areas of Programmatic Strategic Emphasis by supporting high-impact research and innovation, driving USF's role as a major economic engine, and mobilizing public-private partnerships to increase economic and employment opportunities.

   SUS Strategic Goals: Strengthen Quality and Reputation of the Universities; Strengthen Quality and Reputation of Scholarship, Research, and Innovation; Increase Research Activity and Attract More External Funding
   USF Strategic Goal: High-impact research and innovation to change lives, improve health, and foster sustainable development and positive societal change

   The Informatics Ph.D. will support the iSchool's vision for becoming a research-intensive unit and enhance the University's standing among its peers. The iSchool was admitted to the prestigious "iSchools Consortium," (ischools.org) but—according to the Consortium's criteria—the absence of a doctoral program prevents USF from attaining Tier 1 membership status that would put it on par with USF's aspirational peer institutions like University of Pittsburgh, and Georgia Tech. In fact, even a number of our existing peers such as UC Irvine, Rutgers, already have Tier 1 status; without a doctoral program, USF will not.

   The strategic areas of emphasis in clinical research informatics, security and intelligence informatics, and social/humanities informatics—areas not emphasized in many existing Informatics doctoral programs—

will distinguish USF's iSchool nationally and build on our institution's unique expertise. The new research-based program will also accelerate external funding in informatics nationally and internationally.

SUS Strategic Goal: Increase Degree Productivity and Program Efficiency
USF Strategic Goal: Well-educated and highly skilled global citizens through our continuing commitment to student success

The Informatics Ph.D. will increase STEM degree productivity (an area of strategic emphasis), and its interdisciplinary design will maximize efficiency by leveraging the breadth of USF's expertise across its disciplines, departments and colleges.

This program will also create a pathway for select cybersecurity students to pursue a doctoral education at USF. Combined with the iSchool's (STEM) B.S. in Information Studies, concentration in Information Security (or the University's forthcoming BS in Cybersecurity already in development) and with the University's interdisciplinary M.S. in Cybersecurity, the Ph.D. in Informatics would distinguish USF as having cybersecurity-related education programs at all post-secondary levels.

SUS Strategic Goal: Increase Levels of Community and Business Engagement
USF Strategic Goal: A highly effective, major economic engine, creating new partnerships to build a strong and sustainable future for Florida in the global economy.

The Informatics Ph.D. will allow the iSchool to expand faculty and student engagement with community partners, including those in the security/defense, health, and information-intensive sectors. It will offer more opportunities for student participation and facilitate collaborations that add value to the state and local economies. The iSchool's increased productivity will help Florida's employers prosper and grow through knowledge transfer and a steady stream of qualified graduates to support Florida's knowledge economy.

2. Does this program offer collaborative and/or interdisciplinary opportunities at other institutions in the USF and SUS systems? If so, what efforts have been made to initiate collaboration?

Yes. USF's iSchool, and each of its current and proposed programs, are—by design--interdisciplinary and collaborative. We have active partnerships with faculty and units across campus, and with other institutions and agencies. Within USF, we have established research collaborations with the Florida Center for Cybersecurity (FC2); Health Informatics Institute (HII); the Center for Strategic and Diplomatic Studies; the Colleges of Engineering, Education, and Health; the USF Tampa Library, and local, national, and international law enforcement, defense, and security services.

The iSchool has a tradition of partnering and collaborating with academic and research units across the University. For instance, our concentration in Cyber Intelligence, part of our MS in Intelligence Studies, has the largest number of student majors in the USF-wide MS in Cybersecurity, and our very large BS in Health Sciences involves virtually every college at USF. The Ph.D. in Informatics is being designed, similarly, to draw on expertise and collaborations with faculty from other units, as well, including: English, Instructional Technology, Communication, Mass Communication, and others. As noted above, the new degree will also create a pathway for select cybersecurity students to pursue a doctoral education at USF.

3. Provide information on the available resources and capacity for your program. In your response, include faculty availability and student support resources including the library. How will department/college resources be shifted to support the program?

The iSchool has been laying the foundation for this Ph.D. program for the past five years. The faculty has worked collaboratively and with a collective commitment to transforming the iSchool into a research intensive unit. This has involved frank discussions about the implications for faculty time and increased expectations for productivity. The shift in resources not only serves the interest of the new Ph.D. program, but also those of the iSchool's vision for increased research productivity.

The iSchool faculty believe that integrating iSchool and campus-wide expertise harmonizes with our interdisciplinary orientation and multiplies the school's intellectual and instructional capabilities. We will draw on the full complement of research and teaching expertise within the iSchool. Currently our research faculty possess a range of advanced degrees in disciplines relevant to our proposed emphasis areas. There are five full professors, five tenured Associate Professors, and three Assistant Professors. The tenured faculty will be able to chair doctoral committees, and tenure-earning ones can serve on committees and mentor students in other ways. Each doctoral faculty member will be expected to contribute to course offerings to support student needs and success. In addition, six of our nine full-time Instructors have Ph.D.s and can work with doctoral students in various capacities.

A particular strength of the program, as we have designed it, is the integration of faculty from other disciplines and academic units, using an "Affiliated Faculty" model. We will work collaboratively not only with individual faculty members, but also with other departments and centers across the University to ensure a diverse selection of relevant courses and student research opportunities.

The iSchool has a longstanding and exceptionally strong relationship with the Tampa Campus Library. USF's ALA-accredited Library and Information Science graduate program is housed in the school, and several of our graduates are librarians there. Over the past several decades, we have maintained appropriate resources in the library that meet our evolving needs, including those for this proposed Ph.D. program. In addition, we anticipate working closely with the Library as a research partner and information laboratory.

The iSchool has facilities available for seminars and classroom teaching, and all faculty are experts (and certified) in online learning and creative teaching methodologies. We have research computing resources that support tools unique to our programs and that enable advanced statistical analyses, visualization, open source intelligence, machine learning and artificial intelligence, and other applications.

4. What program(s) will be terminated to accommodate this new program if approved? If the answer is 'None', how will resources (e.g., personnel and operating funds) be reallocated to offer the program? (Maximum 250 words)

No existing programs will be terminated to accommodate the Ph.D. in Informatics. The iSchool has well-trained academic services staff to support its current programs. The Health Science program, with roughly 2,900 majors, has a full-time faculty director, 4 advisors, and a staff support person. The BSIS degree has about 180 majors. There is an additional CAS advisor to work with students, and faculty support for further mentoring. The two graduate degrees (MA in LIS and the MSIS) have a combined enrollment of over 400 graduate students, plus another 150 from the MS in Cybersecurity's Cyber Intelligence Concentration. Each has a program director, active participation by the faculty, and a full-time academic program specialist. The iSchool also has an Office Manager and Marketing and Communications Officer, as well as several federal work-study students each year.

To the extent possible, additional courses will be developed and taught within faculty loads without incurring any negative impact on other programs. Adjuncts will be used in cases where other program courses need additional instructional support.

5. How will the program be funded within existing departmental/programmatic funds? (Maximum 250 words)

The iSchool has planned to allocate existing resources to launch the proposed doctoral program, and mitigate its impact on other programs or other functions of the department. Faculty will teach and take on doctoral students within load and in accordance with the CBA. The College of Arts and Sciences will help us to convert existing Graduate Assistantships (roughly 10) to doctoral GA position, so that we can attract the most highly qualified doctoral students as either RAs or TAs who can teach in our UG programs as needed. Over time, we will seek to increase available assistantships, travel funds, and research resources through College support and funded research projects.

6. Please list the Student Learning Outcomes for the program (undergraduate programs must comply with BOG Regulation 8.016 "Academic Learning Compacts").

   Students successfully completing the Ph.D. in Informatics will:

   - Demonstrate mastery of theory and knowledge in the field of Informatics and, given its interdisciplinary nature, a deep understanding of other, contributing disciplines and their emerging trends;
   - Engage in original, rigorous scholarship that contributes new knowledge, processes, and strategies to address key information problems in society and specific domains;
   - Compete successfully for professional and leadership positions in teaching, research, service, and industry in information-related disciplines and career fields.

7. Please list five talking points for the USF System representative to use in the presentation for the State CAVP.

   1. This Ph.D. in Informatics is a STEM doctoral program that helps meet the strategic goals of USF and the SUS Board of Governors.
   2. There is demand for this program, particularly given the way it is designed, the centralized location and access to collaborative partners
   3. The skills and knowledge addressed by the program are in high demand by academic institutions, government agencies, and private industry
   4. No other program in the country offers a combined approach to intelligence and informatics that we have designed as one of the emphasis areas. Proximity and close ties with CENTCOM and SOCOM further distinguish USF's program.
   5. This program will support further research and innovation necessary for USF to advance its position as a nationally competitive iSchool.