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Collection assessment : Physics Minor Proposal, USFSP, 2014

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Patricia C. Pettijohn

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FEBRUARY 6, 2014
PHYSICS MINOR PROPOSAL
Report prepared by Patricia Pettijohn

LIBRARY COLLECTIONS

The Nelson Poynter Memorial Library, physically located at the University of South Florida St. Petersburg (USFSP), houses an extensive collection of materials that supports the educational, research, and service missions of USF St. Petersburg. USF St. Petersburg faculty, staff, and student have on-site access to the Poynter Library's collection of over 221,620 items, including monographs, current periodical and serial subscriptions, newspaper subscriptions, and audiovisual titles.

The shared electronic resources of the libraries of the USF System are available to USFSP students at all times, except for brief system maintenance. Currently, the USF Tampa Libraries, on behalf of all libraries within the USF System, subscribe to over 800 proprietary databases.

All USFSP faculty, staff, and students have efficient interlibrary loan access or in-person borrowing privileges to resources of all libraries of the USF System as well as resources of other local institutions of higher learning through a series of formal agreements. In addition to sharing resources with other libraries in the USF System, USF St. Petersburg's Poynter Library is a member of Lyris, a full member of the Florida Library Information Network (FLIN), and the Tampa Bay Library Consortium (TBLC). Through participation in these networks, student and faculty borrow materials freely within the state, throughout the United States, and when possible, internationally. Courier service expedites interlibrary loan borrowing and lending, and Ariel technologies provide desktop delivery of digitized articles.

Physics and Mathematics Databases and E-Resources

- *AIAA Electronic Library - Meeting Papers*

The AIAA electronic library contains more than four decades of technical information and documents, online accessible. AIAA Meeting Papers is a searchable full text database of all non-classified papers presented at the American Institute of Aeronautics & Astronautics meetings, from 1963 to the present,

- *AIP conference proceedings*

AIP Conference Proceedings report findings presented at many of the most important scientific meetings around the world. Published proceedings are valuable as topical status reports providing quick access to information before it appears in the traditional journal literature.

- *AMS Journals (American Mathematical Society)*

Provides access the full-text of articles published in journals of the American Mathematical Society:

Bulletin (new series) of the American Mathematical Society

Conformal geometry and dynamics

Electronic research announcements of the American Mathematical Society

Journal of the American Mathematical Society

Mathematics of computation

Notices of the American Mathematical Society

Proceedings of the American Mathematical Society

Representation theory

Transactions of the American Mathematical Society

Transactions of the Moscow Mathematical Society

- *Annual Reviews: Astronomy and Astrophysics, Biophysics, Condensed Matter Physics, Earth and Planetary Sciences, Fluid Mechanics, Nuclear and Particle Science.*

Each year, Annual Reviews critically reviews the most significant primary research literature to guide researchers to the principal contributions of their field. Each article linked and searchable, providing a gateway to the essential primary research literature referenced within each topic. Annual Reviews volumes are published each year for 46 focused disciplines within the Biomedical, Life, Physical, and Social Sciences.

- *arXiv*

arXiv is an e-print service in the fields of physics, mathematics, non-linear science, computer science, quantitative biology, quantitative finance and statistics. arXiv is maintained and operated by the Cornell University Library with guidance from the arXiv Scientific Advisory Board and the arXiv Sustainability Advisory Group, and with the help of numerous subject moderators.

- *IoP electronic journals*

Provides access to full text of journals published by the Institute of Physics to which USF subscribes. Gives tables of contents for those to which USF does not subscribe. The USF Libraries are registered with IOP to provide online full text for over 30 Institute of Physics journals. These titles range from Journal of Physics to Europhysics Letters.

- *Lecture Notes in Mathematics*

This Springer series reports on new developments in all areas of mathematics and their applications. The type of material considered for publication includes: research monographs; lectures in a new field; and summer schools and intensive courses on topics of current research. Includes focus on mathematical texts analyzing new developments in modelling and numerical simulation.

- *MathSciNet*

MathSciNet is a searchable Web database providing access to over 55 years of Mathematical reviews and Current mathematical publications from 1940 to the present. Current mathematical publications data is added daily. Mathematical reviews data is added each month when the printed issue is complete.

- *NASA Astrophysics Data System*

The SAO/NASA Astrophysics Data System (ADS) is a Digital Library portal for researchers in Astronomy and Physics. The ADS maintains three bibliographic databases containing more than 8.7 million records: Astronomy and Astrophysics, Physics, and arXiv e-prints. Integrated in its databases, the ADS provides access and pointers to a wealth of external resources, including electronic articles, data catalogs and archives.

- *Optics InfoBase*

Optics InfoBase provides access to the largest collection of peer-reviewed optics and photonics content. This repository includes all of The Optical Society's content, and complements it with key co-publications. With more than 185,000 articles including conference papers from 310 conferences, OSA's content covers a breadth of disciplines.

- *Scitation, OJPS, Online Journal Publication Service*

Provides online searching and browsing access to full text journals of science and engineering societies. Contents: Acoustical Society of America - American Association of Physicists in Medicine -- American Association of Physics Teachers -- American Institute of Physics -- The American Physical Society -- American Society of Civil Engineers -- American Society of Mechanical Engineers International -- AVS, the Science and Technology Society -- Earthquake Engineering Research Institute -- The Electrochemical Society -- Geochemistry Division of the American Chemical Society -- International Centre for Diffraction Data -- IEEE Computer Society -- IS&T, the Society for Imaging Science & Technology -- Laser Institute of America -- MAIK Nauka/Interperiodica * Russian Academy of Sciences -- National Institute of Standards and Technology -- The Society of Exploration Geophysicists -- The Society of Rheology -- SPIE, the International Society for Optical Engineering -- Virtual Journals in Science and Technology.

Selected Biological Sciences Databases and Electronic Resources

- *BioOne Complete: BioOne and BioOne Abstracts & Indexes*

BioOne aggregates over eighty high impact bioscience research journals. Most of BioOne's titles are published by small societies and non-commercial publishers, and, until now, have been available only in printed form. BioOne journals focus on the biological, ecological and environmental sciences. Articles are available in both HTML and PDF formats. For each journal, BioOne presents the full texts of all peer-reviewed papers and all corresponding tables, graphics and illustrations.

- *BIOSIS Previews; Upgraded to BIOSIS Citation Index:*

BIOSIS Previews is the online version of Biological Abstracts and Biological Abstracts/RRM (reports, reviews, and meetings), the largest collection of biological sciences records in the world. BIOSIS Previews indexes over 6000 journals covering biological research, medical research findings, and discoveries of new organisms. There is also indexing of meetings, review articles, books reviews, book chapters, software, and U.S. patents. It covers traditional biology (botany, ecology, and zoology); interdisciplinary areas (biochemistry, biomedicine, and biotechnology) and related areas (instrumentation and methods).

- *COS Conference Papers Index:*

This database provides citations to papers and poster sessions presented at major scientific meetings around the world. Subject emphasis since 1995 has been in the life sciences, environmental sciences and the aquatic sciences, while older material also covers physics, engineering and materials science.

Selected General Science and Related Databases

- *AccessScience*

Full access to over 7,100 articles, 115,000 dictionary terms, and hundreds of research updates in all areas of science and technology updated daily. Also includes over 2000 biographies of leading scientists, weekly updates of breakthroughs and discoveries in science and technology, a science dictionary, and links to related websites.

- *General Science Full Text (EBSCO)*

Designed specifically for undergraduate students and non-specialists, this database features full text, plus graphs, charts, diagrams, photos, and illustrations that convey an abundance of scientific information. High quality indexing as far back as 1984. Full text of articles as far back as 1995.

- *IEEE/IET Electronic Library (IEL)*

Institute of Electrical and Electronics Engineers Xplore, provides full-text access to IEEE transactions, IEEE and IEE journals, magazines, and conference proceedings published since 1988, and all current IEEE standards; brings additional search and access features to IEEE/IEE electronic library users.

- *ScienceDirect*

Contains the full text of more than 1000 Elsevier Science journals in the life, physical, medical, technical, and social sciences available online. Contains abstracts and articles from the core journals in major scientific disciplines. The journals are arranged under subject areas for topical navigation.

- *Web of Knowledge*

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ISI Web of Knowledge includes the resource databases: Web of Science, Current Contents Connect, Journal Citation Reports (JCR) and Biosis Previews.

- *Web of Science*

The ISI Web of Science provides seamless access to the Science Citation Expanded[®], Social Sciences Citation Index[®], and Arts & Humanities Citation Index[™]. It enables users to search current and retrospective multidisciplinary information from approximately 8,500 of the most prestigious, high impact research journals in the world.

- *Wiley Online Library*

Features over 1,000 journals, major reference works, online books, Current Protocols laboratory manuals, and databases as well as a suite of professional and management resources.

- *Academic Search Premier*

Academic Search Premier is the world's largest scholarly, multi-disciplinary database containing full text for nearly 4,650 serials, including more than 3,600 peer-reviewed publications. In addition to the full text, this database offers indexing and abstracts for more than 8,200 journals in the collection.

Data Set Resources

- *Springer Materials: The Landolt-Bornstein Database*

The Landolt-Bornstein Database is the world's largest resource for physical and chemical data in materials science. It contains 250,000 substances and material systems, 3,000 properties, and 1,200,000 literature citations.

- *International Critical Tables of Numerical Data, Physics, Chemistry, and Technology*

This full-text, searchable reference contains an enormous amount of critical data on inorganic and organic compounds, and pure substances. Featuring physical, thermodynamic, mechanical, and other key properties, it is a major reference source used by those involved in chemistry, physics, and engineering.

- *Kovel Critical Tables*

Each table in this reference is fully interactive and searchable by keyword and numeric property value. Tables cover 503 Heat Capacity and Thermal Conductivity, 3,133 Reaction Thermodynamics and Equilibrium Constants, 854 Density and Compressibility, 13,332 Vaporization and Vapor Pressure, 185 Thermal Expansion, 377 Transport and Flow, and 1902 Electrical Properties data.

- *Smithsonian Physical Tables*

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This classic reference source comprises 901 tables of common physical and chemical data. The information provided is broad in scope. It is of general interest to scientists and engineers, and of particular interest to those involved with physics in the larger sense.

Library Holdings By Library of Congress Classification

LC Classification QC1-QC999 (Physics):	1,942 PRINT ITEMS USFSP LIBRARY
LC Classification QC1-QC999 (Physics):	3,510 ITEMS USF E-RESOURCES
LC Classification QC1-QC999 (Physics):	21,387 ITEMS USF TAMPA LIBRARY
LC Classification QC1-QC999 (Physics):	27,658 ALL ITEMS USF SYSTEM
LC Classification QA (Mathematics):	4,464 PRINT ITEMS USFSP LIBRARY
LC Classification QA (Mathematics):	13,735 ITEMS USF E-RESOURCES
LC Classification QA (Mathematics):	44,122 ITEMS USF TAMPA LIBRARY
LC Classification QA (Mathematics):	64,241 ALL ITEMS USF SYSTEM
LC Classification QH301-705.5 (Biology General)):	2,360 PRINT ITEMS USFSP LIBRARY
LC Classification QH301-705.5 (Biology General)):	2,125 ITEMS USF E-RESOURCES
LC Classification QH301-705.5 (Biology General)):	15,955 ALL ITEMS USF SYSTEM
LC Classification Q (Sciences):	22,858 PRINT ITEMS USFSP LIBRARY
LC Classification Q (Sciences):	29,947 ITEMS USF E-RESOURCES
LC Classification Q (Sciences):	22,858 ITEMS USF TAMPA LIBRARY
LC Classification Q (Sciences):	223,999 ALL ITEMS USF SYSTEM

Library Holdings By Subject

The USF St. Petersburg library holds 415 monographs in print with physics as a subject heading, with access to 2,167 electronic books with physics as a subject heading. The shared USF Libraries hold 68,558 items with physics as a subject heading, of which 60,007 are online.

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LIBRARY SERVICES

A reference and instruction librarian, currently Deb Henry, is assigned to support specialized collection development and library instruction for the Physics program as library liaison. Faculty members are encouraged to contact their liaison to request purchases of monographs, media, instructional materials, or new electronic resources. Liaisons also are available to develop and present specialized bibliographic instruction sessions for physics classes and programs. Liaisons also offer one-on-one reference sessions through the reference assistance program, RAP. Distance education courses and programs may receive reference and instruction support by both the physics liaison and the Distance Education librarian. Distance Education support for education students consists of phone and email reference assistance as well as bibliographic instruction support provided through online bibliographies and subject guides, and by librarians embedded within the online component of courses through Canvas. A broad array of library services are available online, including online renewal, and online forms may be submitted to request personalized instruction or suggesting materials for purchase. Reference and research assistance is also available by chat and email through the statewide Ask-A-Librarian service.

The Library hosts a variety of computing resources, services, and access points to support staff, student and public users. Student use computing environments including the Information Commons, Library Instructional Classroom, and public spaces such as Poynter's Corner, powered by USFSP's most dense and robust wireless network. The first floor open use computing area, the Information Commons, hosts all of the hardware and software applications that students need. Students may also check out laptops from the circulation desk, which can be used throughout the building or in the 14 study rooms of the library.

ACQUISITIONS COMMITMENT

Library materials in physics and biological computation are among the more expensive items to purchase or license. The USFSP library has full access to the shared electronic resources of the USF Library system, paid by the University of South Florida Saint Petersburg, based on student FTE. As USFSP continues to develop programs in the sciences, and as student FTE increases, the costs of maintaining access will increase. In 2013, the average price for an academic journal in Physics was \$3,893. per title. In addition, from 2010-2013, the number of physics journals indexed by ISI increased by 2 %, while the average number of physics journals contained in the general science aggregator Academic Search Premiere decreased by 2 %. This simply means that the costs of providing access to the same content will increase, as will the cost of funding access to new content.

The cost of USFSP's share of electronic resources is greatest in the sciences cluster, as, for example, the sciences accounted for 47.2% of USF's total expenditures on electronic resources in 2010-2011. Both the total cost and the USFSP share of these costs increase annually, due to an increase in the cost of resources, the numbers of resources, and the number of USFSP's FTE students.

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